Supreme Court, U.S.

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No. ——

IN THE
Supreme Court of the United States
OCTOBER TERM, 1997

THERM-O-DISC, INC.,
Petitioner,

v.

MARYLAND CASUALTY COMPANY, as subrogee of EILEEN K. GITELSON AND SELMA INVESTMENT CORP. and EILEEN K. GITELSON,
Respondents.

Petition for Writ of Certiorari to the United States Court of Appeals for the Fourth Circuit

PETITION FOR WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Did the court of appeals panel misunderstand and misapply this Court's decisions in *Daubert v. Merrell Dow Pharmaceuticals,* 509 U.S. 579 (1993), and *General Electric Co. v. Joiner,* —— U.S. ——, 118 S.Ct. 512 (1997), when it held, in conflict with the decisions of other Circuit Courts of Appeals, that a trial judge faced with an objection to a proffer of scientific expert testimony can admit that testimony without applying *Daubert's* analytical framework to assess either the "fit" of the testimony or its reliability and without considering or making findings of fact regarding any of the factors this Court set forth in *Daubert*—despite the fact that the objecting party specifically relies upon one or more of these factors in urging that the testimony is not admissible, does not "fit" the case and is unreliable?

2. Did the court of appeals panel misunderstand and misapply this Court's decisions in *Daubert v. Merrell Dow Pharmaceuticals,* 509 U.S. 579 (1993), and *Bourjaily v. United States,* 483 U.S. 171 (1987), when it held, in conflict with the decisions of other Circuit Courts of Appeals, that the burden for demonstrating the admissibility of expert testimony is a mere burden of "production" rather than the required burden of proof?

3. Did the court of appeals panel misunderstand and misapply this Court's decision in *General Electric Co. v. Joiner,* —— U.S. ——, 118 S.Ct. 512 (1997), when, in conflict with other Circuit Courts of Appeals, it used an abuse of discretion standard to determine whether the district court applied the analytical framework of *Daubert,* a question of law subject to *de novo* review?

4. Did the court of appeals panel misunderstand and misapply this Court's decision in *Daubert v. Merrell Dow Pharmaceuticals,* 509 U.S. 579 (1993), when it held, in conflict with the decisions of other Circuit Courts of Appeals, that a trial judge faced with an objection to a

proffer of scientific expert testimony may admit the testimony without considering or making any findings of fact as to whether the bases of the testimony were facts and data not reasonably relied upon by similar experts and thus not admissible under Fed.R.Evid. 703?

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PETITION FOR WRIT OF CERTIORARI

Petitioner, Therm-O-Disc, Incorporated, through its counsel, The Kobayashi Law Firm, P.C., and Skadden, Arps, Slate, Meagher & Flom LLP, respectfully prays that a writ of certiorari issue to review the judgment and opinion of a panel of the United States Court of Appeals for the Fourth Circuit entered in this proceeding on February 27, 1998, in order to resolve the conflicts between the Fourth Circuit and other circuits regarding interpretation of the Supreme Court decisions of *Daubert*

v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993) ("*Daubert*"), *General Electric Co. v. Joiner,* —— U.S. ——, 118 S.Ct. 512 (1997) ("*Joiner*") and *Bourjaily v. United States,* 483 U.S. 171 (1987) ("*Bourjaily*") on issues of fundamental importance to the proper administration of justice in the lower federal courts presented herein.

OPINIONS BELOW

The published opinion of the United States Court of Appeals for the Fourth Circuit, filed on February 27, 1998, that gives rise to this petition is reprinted in Appendix A hereto ("App. A") at pages 1a-12a ("Panel Opinion"). The final Order and Judgment of the United States District Court of Maryland is reprinted in Appendix B hereto ("App. B") at pages 13a-14a. The Petition for Rehearing and Suggestion for Rehearing *En Banc* was denied by the Panel on March 24, 1998 and its Order is reprinted in Appendix C hereto ("App. C") at pages 15a-16a. Select pages of the proceedings in what the district court characterized as a "*Daubert*-type" hearing are reprinted in Appendix D hereto ("App. D") beginning at page 17a.

JURISDICTION

On December 13, 1995, judgment on a subrogation claim was entered upon a jury verdict in favor of Respondent, Maryland Casualty Company, in the United States District Court for the District of Maryland. Petitioner timely appealed the judgment to the Fourth Circuit, which affirmed the district court judgment and denied Petitioner's timely-filed Motion for Rehearing and Suggestion for Rehearing *En Banc.* Pursuant to Supreme Court Rule 13.1, this petition has been filed within 90 days of the denial of the petition for rehearing. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. § 1254(1).

STATEMENT OF THE CASE

In this product liability subrogation case, Respondent proffered the opinion testimony of its expert witness, James Rodems, who proposed two novel theories in support of its contention that an alleged manufacturing defect in Petitioner's thermostat, contained in a Whirlpool clothes dryer, caused a fire in the subrogee's home.

A. The "*Daubert*-Type" Hearing.

By motion in limine, Petitioner challenged the admissibility of Mr. Rodems' opinion testimony. Immediately before commencement of trial, the district court held what it characterized as a "*Daubert*-type" hearing regarding the admissibility of this opinion testimony. App. D at 18a.

1. *The Misplaced Burden of Proof.*

At the hearing, the district court judge stated that *Daubert* applied to the circumstances of the case and that he understood his "gatekeeper" role regarding the admissibility of the proposed expert's testimony. App. D at 18a. However, the district court then invited Petitioner's counsel to proceed, and incorrectly stated, "you have the burden of proof." App. D at 18a. Respondent suggested that, to facilitate the proceedings, his witness go first. App. D at 18a-19a. Although the district court complied with the request, the change in order of presentation did not cure the district court's confusion regarding who had the burden of proof. At the end of the "*Daubert*-type" hearing, the district court erroneously ruled that Petitioner had failed to meet its burden, stating "the defendant has failed to establish . . . Mr. Rodems relied upon a scientific principle that was not valid." App. D at 39a-40a.

2. *Respondent's Expert's Speculative Testimony.*

Respondent's proffered expert, Mr. Rodems, is an engineer with degrees in electrical engineering. Although

Mr. Rodems testified that he had examined some 20 to 30 thermostats in his experience, there was no disclosure of whether those thermostats were in any way related or similar to the subject thermostat. App. D at 19a. He asserted that in "other examinations," he considered principles regarding "thermostats and the heat generated." App. D at 19a. These "examinations" and "principles" were not further identified.

Mr. Rodems advanced two entirely new, novel and wholly speculative theories in support of his claim of defect. His first theory was that the electrical contacts in the thermostat were somehow misaligned at some unidentified time to an undetermined extent and therefore caused excessive resistance heating at or near the point of alleged misalignment. This heat allegedly melted both the contacts and the phenolic insulation housing, allowing the thermostat to fall out of its holding bracket, creating an electric arc to the back panel of the dryer, and producing a shower of molten metal sparks that somehow caused the fire in the house (the "misaligned contacts theory").

The second theory was described as the "catastrophic plasma arc" theory, in which Mr. Rodems asserted that the alleged melting of the switch contact created a "catastrophic plasma arc" that caused an internal explosion of the thermostat, resulting in its disintegration and explosion out of the phenolic insulation housing in a shower of sparks, thereby grounding a portion of the switch assembly against the rear panel of the dryer, and somehow caused the fire.

Mr. Rodems had never previously testified in court regarding either theory. Indeed, by his own admission, his testimony was the first time he had ever heard of either of these theories being applied to a thermostat like the subject thermostat. App. D at 26a-27a. He did not and could not cite a single peer reviewed or published reference discussing or supporting his novel theories as applied to this thermostat. App. D at 20a-22a.

During the "*Daubert*-type" hearing, Mr. Rodems made a number of admissions demonstrating the lack of any proof of scientific validation or "good grounds" for his theories. For example, no scientific principle was identified or shown to be directly applicable to the thermostat at issue. App. D at 24a-26a. Mr. Rodems performed no tests to illustrate or substantiate either one of his theories. App. D at 22a-23a. In fact, only Petitioner subjected Mr. Rodems' contact misalignment theory to tests—tests that produced results entirely inconsistent with Mr. Rodems' hypothesis. App. D 28a-29a. Nor was there any evidence of any degree of acceptance of Mr. Rodems' theories in any scientific community. App. D at 29a-33a. In short, Rodems' explanation of how his theories applied to smaller switches,[1] like the Petitioner's thermostat, was based on unsupported beliefs and speculative conjecture hypothesizing what might happen if conditions that were never shown to have existed with respect to the subject thermostat were assumed to have occurred. App. D at 35a. Significantly, none of the witnesses who testified could identify a single instance in which a thermostat actually failed through the mechanism of either one of Mr. Rodems' theories. The trial judge admitted Mr. Rodems' testimony without consideration of, or making any findings of fact regarding, the "fit" or reliability of the proposed testimony or regarding the application of any of the relevant factors set forth in *Daubert* for determining "fit" and reliability.

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[1] Mr. Rodems admitted that the only time he had seen this theory, either applied or in the literature, was in switches such as circuit breakers, relays and power panels, that are much larger than and carry substantially higher currents than the thermostat at issue here and therefore bear no relation to this case. App. D at 23a-24a. Mr. Mason, Petitioner's expert, confirmed that Mr. Rodems' theory did not apply to small switches like the subject switch. App. D at 29a-30a.

B. The Fourth Circuit Panel Opinion.

The Panel Opinion, *per curiam,* affirmed the district court's admission of Mr. Rodems' "expert" testimony. App. A at 10a. Incorrectly interpreting and applying *Joiner,* the Panel Opinion held that the standard of review applicable to the manner in which the district court construed and applied *Daubert's* analytical framework is an abuse of discretion standard. App. A at 4a. In *Joiner,* however, this Court held only that the ultimate question of admissibility—i.e., whether the proffered evidence was properly admitted or excluded—should be reviewed under an abuse of discretion standard. The issue on this appeal is not the district court's decision to admit the evidence based upon its discretionary evaluation of the facts relevant to *Daubert's* analytical framework, but whether the district court in the first instance correctly followed the *Daubert* framework, a question of law subject to *de novo* review. App. A at 4a. Other Circuit Courts of Appeals properly have held that there is an initial *de novo* review of whether the *Daubert* framework was applied properly. Only after finding that *Daubert* was applied properly by the district court do these courts undertake an abuse of discretion review to determine whether the district court properly admitted or excluded the evidence.

The Panel Opinion then held that *Daubert* does not impose a burden of proof on the party proffering expert testimony, but rather only imposes a burden of production so that the trial judge may make a preliminary assessment of whether the proffered testimony is both reliable and helpful. App. A at 4a. The Panel Opinion misinterprets the holdings of this Court in *Bourjaily* and *Daubert,* and is in conflict with the decisions of several other Circuit Courts of Appeals. The Panel Opinion also erred when it found that the district court did not impermissibly shift the burden of proof to Petitioner to demonstrate that the expert testimony was not admissible. App A at 6a-7a.

Using its erroneous abuse of discretion standard of review, the Panel Opinion held that the district court did not err in failing to apply any of the *Daubert* factors to the proffered testimony to determine if the testimony was both reliable and helpful. Most significantly, the district court failed to consider whether Mr. Rodems' novel and speculative theories "fit" the facts of this case. The Panel Opinion states that application of the *Daubert* factors is not mandatory, but rather is discretionary. App. A at 8a. The Panel Opinion contradicts Fourth Circuit precedent in *United States v. Powers*, 59 F.3d 1460, 1470 (4th Cir. 1995), *cert. denied*, 516 U.S. 1077 (1996), that found consideration of the factors to be directed by this Court, and conflicts with other Circuit Courts of Appeals that require consideration of the *Daubert* factors. App. A at 9a, fn. 29.

The Panel Opinion, in a single sentence, notes that the expert relied on authoritative manuals and treatises in reaching his opinions. App. A at 10a. However, the Panel Opinion does not consider the district court's failure to apply Rule 703 to the proffered opinion testimony as required by *Daubert*. The Panel Opinion disregarded the unequivocal statement of this Court in *Daubert*, which imposes an unconditional, preclusive requirement that expert opinions based on otherwise inadmissible hearsay be admitted "only if" the hearsay is comprised of the type of data and facts reasonably relied upon by experts in the particular field.

REASONS FOR GRANTING THE WRIT

Lower courts have been struggling to apply *Daubert's* analytical framework in a wide variety of settings. The thrust of this Court's decision in *Daubert* is the recognition that a trial judge must act as a true "gatekeeper" to assure that expert opinion testimony is reliable and relevant and "fits" before any such testimony is ruled

admissible for the jury's consideration. The basic function of the judge as gatekeeper is to decide whether and how expert testimony fits a case and whether it is sufficiently reliable to be admitted. As such, fact finding is critical to the gatekeeping function.

Indeed, the language of Fed.R.Evid. 104(a) requires a trial judge to function as a fact finder pursuant to *Daubert* when facts are contained within the context of an evidentiary dispute over admissibility. The instant case marks a radical and entirely unauthorized departure from the path other Circuit Courts of Appeals have taken because the Panel Opinion held that the trial judge need not apply the *Daubert* analytical framework to assess whether the methodology underlying an expert's opinion is reliable. Rather, the Panel Opinion held that the trial judge must only ensure that the proponent of the expert testimony has produced some evidence arguably relevant to the question of reliability. This is not gatekeeping. Instead, it represents acceptance of the argument made by the original *Daubert* petitioners that all that a trial judge must do is find some bases upon which a jury could accept evidence in order for that evidence to be admitted. In sum, the decision below raises a serious conflict among the circuits and promises to lower the bar to "junk science," as evidenced by the testimony actually admitted in this case, and to resurrect the argument of the *Daubert* petitioners that this Court explicitly rejected.

Moreover, while other circuits have recognized that the four factors this Court identified in *Daubert* are not exclusive or always relevant, no other circuit has held that *Daubert's* analytical framework has been satisfied when a trial court completely disregards an objecting party's evidence as to these and other relevant factors without any analysis whatsoever. If an objecting party provides evidence on these factors, Fed.R.Evid. 104(a) makes the trial judge a fact finder. Nothing in this Court's decision

in *Daubert* even suggests that a trial judge can arbitrarily ignore evidence of unreliability. Certainly, nothing in *Daubert* purports to excuse a trial judge from addressing one of these four factors when an objecting party explicitly relies upon it and offers evidence to support it.

Finally, in holding that the proponent of expert testimony does not have the burden of proving the admissibility of that evidence, but must merely meet a burden of production of evidence, the Panel Opinion ignores this Court's decisions in *Daubert* and *Bourjaily* and creates a direct split among the circuits on this issue. In sum, the Panel Opinion creates significant conflicts among the circuits (and within its own circuit). This Court should grant this writ to resolve these important conflicts.

I. THE PANEL OPINION'S HOLDING THAT *DAUBERT* DOES NOT REQUIRE THE CONSIDERATION OF ANY FACTORS WHEN EVALUATING RELIABILITY AND HELPFULNESS CONFLICTS WITH THE HOLDINGS OF OTHER CIRCUITS.

The Panel Opinion erred in stating that a district court need not consider any of the factors this Court and other Circuit Courts have developed to assess the reliability and helpfulness, i.e., "fit" of scientific evidence. App. A at 7a-8a. The Panel Opinion contradicts the basic requirements set forth by this Court in *Daubert* and a majority of other Circuit Courts of Appeals, including, prior to this decision, the Fourth Circuit Court of Appeals itself. Thus, the Panel Opinion has created a conflict among the circuits in interpreting the decision in *Daubert* that should be addressed by this Court in order to avoid further confusion and misapplication of *Daubert*.

Daubert, of course, explicitly requires that, in evaluating scientific evidence, a trial court must establish (1) the reliability and (2) the helpfulness of such evidence,

prior to its admission. *Daubert*, 509 U.S. at 591-592. The factors set forth in *Daubert* to assist trial courts in the evaluation of the reliability and "fit" of scientific evidence, which have come to be generally known as "the *Daubert* factors," were intended to be non-exclusive and non-exhaustive. *Daubert*, 509 U.S. at 593-595. Contrary to the reasoning of the Fourth Circuit, however, *Daubert* does not stand for the proposition that a trial court may choose not to consider *any* of the factors in determining the reliability of scientific evidence. Rather, a trial court must apply those factors that are appropriate, i.e., relevant to the case before it, to determine whether there are "good grounds" for the proffered scientific expert opinion.

Since *Daubert* was decided, courts have looked to the *Daubert* factors as the foundation from which to begin an analysis of the reliability of purported scientific evidence. In *Daubert* on remand, the Ninth Circuit accepted the *Daubert* factors as a starting point, determined that some of the factors were not relevant to the case, and added an additional consideration—whether the proposed testimony grew out of independent research or was developed, as were Rodems' theories, solely for the purpose of testifying. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311 (9th Cir. 1995), *cert. denied*, 516 U.S. 869 (1995).

Similarly, the Third Circuit, using the *Daubert* factors as a starting point, has added other factors to be separately evaluated. These additionally required factors include (1) the existence and maintenance of standards controlling a technique's operations; (2) the relation of the technique to methods which have been established to be reliable; (3) the qualifications of the expert witness testifying based on the methodology; and (4) the non-judicial uses to which the method has been put. *See In Re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 742, fn. 8.

Before issuing the Panel Opinion, the Fourth Circuit itself required consideration of the *Daubert* factors. *Powers*, 59 F.3d at 1471 (". . . the Supreme Court directed trial courts to consider, when evaluating the scientific validity of proposed evidence," the following four "factors"). In now holding that *no* criteria are required under *Daubert* for an evaluation of scientific reliability, the Fourth Circuit has ignored both its own precedent and the thoughtful decisions of other Circuit Courts of Appeals to the contrary.

Some of the Circuit Courts of Appeals have stated that not all of the factors are always applicable. *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1316-17 (9th Cir. 1995), *cert. denied*, 516 U.S. 869 (1995). Additionally, a court need not consider all of the factors. *See United States v. Cruz*, 127 F.3d 791, 801 (9th Cir. 1997). However, when *Daubert* has been held to apply to the evaluation of scientific testimony, as in the instant case, no Circuit Court of Appeals, until the Panel Opinion, has held that *none* of the *Daubert* factors need be considered. Indeed, the Sixth Circuit Court of Appeals has held that the trial court failed in its gatekeeper role in admitting the proffered testimony when it considered none of the *Daubert* factors. *Smelser v. Norfolk Southern Ry. Co.*, 105 F.3d 299, 303 (6th Cir. 1997), *cert. denied*, 118 S.Ct. 67 (1997).

II. THE PANEL OPINION'S HOLDING THAT *DAUBERT* DOES NOT IMPOSE A BURDEN OF PROOF ON THE PROPONENT OF SCIENTIFIC EVIDENCE CONFLICTS WITH THE DECISIONS OF OTHER CIRCUIT COURTS OF APPEALS.

In holding that the proponent of expert testimony does not have the burden of proving the admissibility of that evidence, the Panel Opinion creates a direct split among the Circuits on this issue. The Panel Opinion stated that *Daubert* only requires courts to perform a "preliminary

assessment" of the proffered expert testimony and, therefore, the proponent does not have to "prove anything to the court before the testimony in question can be admitted." [2] App. A at 4a-5a.

The majority of the other Circuit Courts of Appeals directly hold to the contrary. Indeed, this Court in *Daubert*, in footnote 10, directs that the admissibility of such evidence must be established by a "preponderance of proof" as required under Fed.R.Evid. 104. *Daubert*, 509 U.S. at 592 n.10 (citing *Bourjaily v. United States*, 483 U.S. 171, 175-176 (1987)). *Bourjaily* states that the party proposing the admission of evidence must establish the admissibility by a preponderance of proof. *Bourjaily*, 483 U.S. at 175. This evidentiary standard is unrelated to the burden of proof on substantive issues. *Id.* "The preponderance standard ensures that, before admitting evidence, the court will have found it more likely than not that the technical issues and policy concerns addressed by the Federal Rules of Evidence have been afforded due consideration." *Id.*

The Panel Opinion failed to apply the plain meaning to the phrase "preponderance of proof" designated as the proper burden of proof by both *Daubert* and *Bourjaily*. In fact, the Panel Opinion erroneously found that Petitioner misused the term preponderance of proof to denote a burden of production, holding in footnote 9 that *Bourjaily* distinguished between preponderance of proof and a

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[2] Not only did the Panel Opinion incorrectly rule that the proponent of the evidence had only a burden of production of evidence on admissibility, it also incorrectly ruled that the district court did not err in shifting the burden, whether of proof or production, to Petitioner. The only basis disclosed by the trial court for admitting Rodems' testimony was, at the *end* of the *Daubert* hearing, that Petitioner failed to prove Rodems relied on a scientifically invalid principle. App. A at 7a. Despite the district court's ruling, the Panel Opinion erroneously concluded that the burden shifting mistake was corrected. App. A at 7a.

burden of proof. App. A at 4a-5a. To the contrary, this Court has continually distinguished a preponderance of proof burden from a burden of production. *Director, Office of Workers' Compensation Programs, Dep't of Labor v. Greenwich Collieries,* 512 U.S. 267, 274-275 (1994). The case law that has evolved demonstrates that, although often blurred by careless speech, the two terms are distinct concepts. *Id.* This Court held in *Greenwich Collieries,* for example, that "a standard of proof, such as preponderance of the evidence, can apply only to a burden of persuasion, not to a burden of production." *Id.* at 278. It follows, therefore, that this Court's use of the phrase "preponderance of proof" in *Bourjaily* was intended to refer to a burden of proof. In short, the profferor of expert testimony unquestionably bears, as a matter of law, a "burden of proof" to persuade the court that the testimony is admissible.

The Panel Opinion's misunderstanding of the burden of proof with respect to admissibility is further demonstrated by its quotation and citation of *In re Paoli:* "plaintiffs do not 'have to prove their case twice—they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are *correct,* they only have to demonstrate by a preponderance of the evidence that their opinons are reliable.' " App. A at 6a, citing *In re Paoli R.R. Yard PCB Litig.,* 35 F.3d 717, 744 (3d Cir. 1994), *cert denied,* 513 U.S. 1190 (1995) (emphasis in original). The quoted language of *Paoli* requires a proponent of expert testimony to meet more than a mere burden of production. *Id.* The holding of the Panel Opinion eliminates the requirement that the district court address the "technical issues and policy concerns" raised by the Federal Rules of Evidence. *Id.*

The Panel Opinion directly conflicts with the majority of the other Circuit Courts of Appeals opinions on the issue. For example, the Ninth Circuit squarely has held

that the proponent of the expert testimony bears the burden of proving its admissibility. *Lust v. Merrell Dow Pharmaceuticals, Inc.*, 89 F.3d 594, 598 (9th Cir. 1996). The Sixth Circuit has affirmed a district court decision excluding expert testimony because the plaintiff failed to persuade the court that the testing was reliable and supported by the raw data. *American & Foreign Ins. Co. v. General Elec. Co.*, 45 F.3d 135, 139 (6th Cir. 1995). The Tenth Circuit has stated that the standard articulated by this Court in *Daubert* is simply a restatement of Rule 702, and, as such, courts are bound to determine that the requirements of the rules of evidence, in general, are met by a preponderance of proof. *Summers v. Missouri Pacific R.R. Sys.*, 132 F.3d 599, 603 n.3 (10th Cir. 1997). These courts recognize that the party offering the expert testimony must lay a foundation for its admission. *See e.g., United States v. Williams*, 95 F.3d 723, 729 (8th Cir. 1996), *cert. denied*, 117 S.Ct. 750 (1997).

Permitting the Panel Opinon's interpretation of *Daubert* to stand would undermine the technical issues addressed by the Federal Rules of Evidence, as discussed by this Court in *Bourjaily*, and the policy concerns and implications of this Court's holding in *Daubert*. *Daubert* relies on trial courts to act as gatekeepers and exclude evidence that is unsupported and speculative. Were the question of admissibility to turn merely on the burden of production, courts would be forced to admit evidence that under the appropriate preponderance burden of proof standard would be excluded as having too great an analytical gap to be reliable or helpful. *Joiner*, 118 S.Ct. at 519. For example, the Panel Opinion's lower standard of mere "burden of production" for establishing evidentiary foundation requirements for admissibility would seem to allow the admission of expert opinion testimony based on animal studies without requiring the proponent to persuade the court that the expert properly extrapolated the data and that such data would be, and was, appropriately

applied to humans as a method of proving the cause of certain diseases. This type of opinion testimony has repeatedly been excluded by courts properly applying *Daubert*. *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311 (9th Cir. 1995), *cert. denied*, 516 U.S. 869 (1995); *Raynor v. Merrell Pharmaceuticals, Inc.*, 104 F.3d 1371 (D.C. Cir. 1997).

Unlike the Fourth Circuit, the majority of the Circuit Courts of Appeals have correctly interpreted *Daubert* and *Bourjaily*. Petitioner respectfully requests this Court issue the requested writ in order to clarify and reinforce the correct burden to apply to the admissibility of expert testimony pursuant to *Daubert*.

III. THE STANDARD OF REVIEW APPLIED BY THE PANEL TO DETERMINE WHETHER *DAUBERT*'S ANALYTICAL FRAMEWORK WAS PROPERLY APPLIED IS ERRONEOUS AND DIRECTLY CONFLICTS WITH THE DECISIONS OF OTHER CIRCUITS.

The Panel Opinion misinterprets and misapplies this Court's holding in *Joiner* by applying an abuse of discretion standard of review rather than a *de novo* standard of review to the issue of whether the analytical framework of *Daubert* was properly applied as a matter of law. Questions of law are to be reviewed *de novo*. *See Pierce v. Underwood*, 487 U.S. 552, 558 (1988).[3]

In its appeal, Petitioner not only asserted that the admission of the expert testimony was an abuse of discretion, but also, and more importantly, asserted that the district court failed to properly apply the framework of *Daubert* as a matter of law. The Sixth, Seventh, Ninth

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[3] The Panel Opinion, by applying an abuse of discretion standard, directly contradicts Fourth Circuit precedent holding that a *de novo* standard of review is applicable to questions of law. *Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1383 (4th Cir. 1995).

and Tenth Circuits all have addressed this issue and have held that the proper application of *Daubert* is a question of law for the court to review *de novo*. Only then, once *Daubert's* relevance and proper application have been determined *de novo*, is the court of appeals powered to reverse the exclusion or admission of evidence governed by an abuse of discretion standard. *Cummins v. Lyle Indus.*, 93 F.3d 362, 367 (7th Cir. 1996) ("We first undertake a *de novo* review of whether the district court properly followed the analytical framework established in *Daubert*."); *McKendall v. Crown Control Corp.*, 122 F.3d 803, 805 (9th Cir. 1997); *Compton v. Subaru of America, Inc.*, 82 F.3d 1513, 1517 (10th Cir. 1996), *cert. denied*, 117 S. Ct. 611 (1996). The court of appeals must undertake a *de novo* review of whether the district court properly applied *Daubert's* framework and its factors. *See Smelser v. Norfolk Southern Ry. Co.*, 105 F.3d 299, 302-303 (6th Cir. 1997), *cert. denied*, 118 S.Ct. 67 (1997).

The Seventh Circuit has addressed this issue subsequent to this Court's decision in *Joiner* and continues to apply a *de novo* standard when reviewing the initial application of *Daubert*. In its post-*Joiner* decision, *United States v. Vitek Supply Corp.*, —— F.3d ——, 1998 WL 242446 (7th Cir. 1998), the Seventh Circuit applied a two-tier standard of review to an appeal involving *Daubert* issues. The Seventh Circuit first applied a *de novo* review to ensure that the district court followed the *Daubert* framework. *Id.* After determining the court's analysis was within the parameters of *Daubert*, the court applied an abuse of discretion standard to review the actual admission or exclusion of evidence. *Id.*

The Panel Opinion ignores the *de novo* standard of review and applies an abuse of discretion standard, citing *Joiner*. However, this Court's decision in *Joiner* did not alter the application of a *de novo* standard of review for

initially determining whether the framework of *Daubert* was applied properly as a matter of law. *Joiner* only dealt with the applicable standard of review of the district court's decision to admit or exclude the scientific evidence after proper application of *Daubert*. Therefore, *de novo* review remains the proper standard for reviewing whether *Daubert* was properly applied as a matter of law, while abuse of discretion is the proper standard for reviewing the resulting admission or exclusion of evidence. The Fourth Circuit neither acknowledged nor applied the *de novo* standard of review and, therefore, the Panel Opinion is in conflict with the law of the Sixth, Seventh, Ninth and Tenth Circuits.

IV. THE COURT OF APPEALS ERRED IN DISREGARDING THE DISTRICT COURT'S FAILURE TO APPLY FEDERAL RULE OF EVIDENCE 703 IN DETERMINING THE RELIABILITY OF THE EXPERT TESTIMONY AS DIRECTED BY *DAUBERT*.

The Panel Opinion does not substantively address Petitioner's appellate challenge to the district court's failure to apply Fed.R.Evid. 703. In so doing, the Fourth Circuit contravenes the directions of this Court in *Daubert* instructing trial courts to be specifically "mindful" of Rule 703, which imposes an unconditional, preclusive requirement that expert opinions based on otherwise inadmissible hearsay are to be admitted "only if" the facts or data relied upon by the expert are of the type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject. *Daubert*, 509 U.S. at 595. The question of whether facts, data or opinions relied upon are of a type reasonably relied upon by experts in the field is a preliminary one for the court. *Moore v. Ashland Chem., Inc.*, 126 F.3d 679, 693 (5th Cir. 1997). The Panel Opinion, in failing even to address Petitioner's Rule 703 challenge, conflicts with this Court's clear instruction in *Daubert* and the opinions of several Circuit Courts of Appeals.

The resulting prejudice to Petitioner is highlighted by the Panel Opinion itself, which held that the district court's admission of plaintiff's expert testimony was not an abuse of discretion because "Rodems was able to cite numerous works of technical literature that he *alleged* supported his mode of analysis." App. A at 10a (emphasis added). As other Circuit Courts of Appeals have recognized, *Daubert's* "only if" language requires more than mere allegations of reliability by the proffered expert. These Courts of Appeals have held as a matter of law that an expert's own bald assurances of validity are not enough to satisfy Rule 703. *Smelser v. Norfolk Southern Ry. Co.*, 105 F.3d 299, 303 (6th Cir. 1997); *United States v. Pierre*, 47 F.3d 241, 243 (7th Cir. 1995); *Daubert*, 43 F.3d at 1316. *See also Joiner*, 118 S. Ct. at 519 ("[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert.")

As the record below makes clear, these references to technical literature and Rodems' allegations that the literature supported his mode of analysis were the only bases available to support the proffered expert testimony. Those references were, as a matter of law, wholly inadmissible hearsay to which *Daubert* instructs the trial court to apply Rule 703. The Panel Opinion failed to address the district court's failure to require Respondent to establish the foundations for the hearsay that are preconditions to admissibility under Rule 703. The Panel Opinion below further erred by holding that the admission of this testimony, which did not meet Rule 703, was not an abuse of discretion.

CONCLUSION

For the above stated reasons, the petition for a writ of certiorari should be granted and a writ of certiorari should be issued.

Respectfully submitted,

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June 22, 1998

APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 96-1192

THE MARYLAND CASUALTY COMPANY,
as Subrogee of Eileen K. Gitelson;
EILEEN K. GITELSON;
SELMA INVESTMENT CORPORATION,
Plaintiffs-Appellees,

v.

THERM-O-DISC, INCORPORATED,
Defendant-Appellant,

and

WHIRLPOOL CORPORATION;
EMERSON ELECTRIC COMPANY,
Defendants.

Appeal from the United States District Court
for the District of Maryland, at Baltimore
J. Frederick Motz, Chief District Judge
(CA-93-1132-JFM)

Argued: May 8, 1997
Decided: February 27, 1998

Before WILKINSON, Chief Judge, and RUSSELL *
and MICHAEL, Circuit Judges

Affirmed by published per curiam opinion.

COUNSEL

ARGUED: John M. Kobayashi, KOBAYASHI & ASSOCIATES, P.C., Denver, Colorado, for Appellant. Mark E. Opalisky, COZEN & O'CONNOR, Philadelphia, Pennsylvania, for Appellees.

OPINION

PER CURIAM: [1]

This appeal requires us to consider the sufficiency of an evidentiary determination made by the district court. Specifically, we are called upon to decide whether the district court properly carried out its function as evidentiary "gatekeeper" pursuant to the Supreme Court's mandate in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[2] Because we find that the district court made its decision to admit certain expert testimony in accordance with the demands of *Daubert* and its progeny, we affirm its ruling.

Facts and Procedural Background

The underlying facts of this case are straightforward. On the evening of December 30, 1991, fire broke out in Eileen Gitelson's home in Potomac, Maryland. Mrs. Gitel-

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* Judge Russell participated in the decision of this case, but died prior to the time the opinion was issued. The opinion is filed by a quorum of the panel pursuant to 28 U.S.C. § 46(d).

[1] This opinion was drafted by Judge Donald S. Russell. Judge Russell died while the case was under submission. The remaining panel members continue to concur in the opinion prepared by Judge Russell.

[2] 509 U.S. 579 (1993).

son's insurance carrier, Maryland Casualty Company ("Maryland Casualty"), paid Mrs. Gitelson for her loss, and was subrogated to any claims she had regarding the fire. Maryland Casualty then sued Appellant Therm-O-Disc, Inc. ("Thermo-O-Disc") to recover for the damage, alleging that a defective thermostat, manufactured by Thermo-O-Disc and contained in Mrs. Gitelson's Whirlpool drier, caused the fire.

At trial, Maryland Casualty sought to introduce the testimony of James Rodems ("Rodems"), an electrical engineer specializing in thermostats and other electrical switches. Rodems was expected to testify that, in his opinion, the fire that began in Mrs. Gitelson's drier was indeed caused by a malfunction in the Therm-O-Disc thermostat. Therm-O-Disc objected to this proferred testimony, and moved *in limine* to exclude it. As a result of this objection, the district court held a "*Daubert*-type hearing" [3] to determine whether Rodems's testimony was admissible.

This *Daubert* hearing lasted several hours, and resulted in the district court's admission of Rodems's testimony. At the close of all evidence in the case, Therm-O-Disc made a motion for judgement as a matter of law pursuant to Rule 50(a) of the Federal Rules of Civil Procedure, arguing that: (A) Rodems's testimony was based on conjecture and speculation and was therefore not properly admitted, and (B) Maryland Casualty had failed to show a causal link between the allegedly defective thermostat and the fire. The district court denied this motion.

The jury returned a verdict in favor of Maryland Casualty, and assessed damages in the amount of $635,893 against Therm-O-Disc. Therm-O-Disc renewed its motion for judgement as a matter of law, which the district court also denied. This appeal followed.

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[3] J.A. at 2.

Discussion

I.

Therm-O-Disc's primary argument in this appeal is that the district court failed to apply the test for the admission of expert scientific testimony demanded by *Daubert*. Within this broad allegation, Therm-O-Disc makes several specific arguments. We consider each in turn, and review the district court's decision to admit the testimony for abuse of discretion.[4]

A.

Therm-O-Disc first argues that the district court erred in placing on Therm-O-Disc the "burden of proof" [5] regarding the relevance and reliability of Rodems's testimony. Such a shift constitutes error, Therm-O-Disc contends, because "*Daubert* requires the party proffering the expert testimony to meet its Rule 104(a) [of the Federal Rules of Evidence] burden by a preponderance of evidence." [6] *Daubert*, however, makes no mention of a burden of "proof" regarding the decision to admit expert scientific testimony. We assume Therm-O-Disc misuses this term to denote Maryland Casualty's burden of *production*—that is, the burden of coming forward with evidence from which the trial court could determine, as *Daubert* demands, that (1) the expert will testify to "scientific knowledge," and (2) the expert's testimony "will assist the trier of fact to understand or determine a fact in issue." [7]

Nevertheless, in treating this as a "burden of proof," Therm-O-Disc misreads *Daubert*. All *Daubert* demands is that the trial judge make a "preliminary assessment" of whether the proffered testimony is both reliable (i.e. based

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[4] *General Elec. Co. v. Joiner*, 118 S. Ct. 512, 517 (1997).

[5] Appellant's Br. at 18.

[6] *Id.* at 20.

[7] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592 (1993).

on "scientific knowledge") and helpful (i.e. of assistance to the trier of fact in understanding or determining a fact in issue).[8] As in all questions of admissibility, the proferring party must come forward with evidence from which the court can determine that the proffered testimony is properly admissible. However, there is no requirement in *Daubert*, or any other controlling authority, that the proffering party must "prove" anything to the court before the testimony in question can be admitted.[9]

In replacing the stricter "general acceptance" test of *Frye v. United States*[10] with its requirement that the proferred testimony merely be reliable and helpful, the *Daubert* court expressly stated that it did so in keeping with the " 'liberal thrust' "[11] of the Federal Rules of Evi-

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[8] *Id.*

[9] *Daubert* cites Rule 104(a) of the Federal Rules of Evidence ("Rule 104(a)"), which states, in part, that "[p]reliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b)." Fed. R. Evid. 104(a) (West 1997). "Subdivision (b)" states that "[w]hen the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence *sufficient to support* a finding of the fulfillment of the condition." Fed. R. Evid. 104(b) (West 1997) (emphasis added).

Daubert references *Bourjaily v. United States*, 483 U.S. 171 (1987), for the proposition that "[t]hese matters should be established by a preponderance of proof." *Daubert*, 509 U.S. at 592 n.10. We do not, however, interpret "a preponderance of proof" to refer to a *burden* of proof, particularly as the Court in *Bourjaily* made the distinction between these two concepts, declaring that "the evidentiary standard is unrelated to the burden of proof on the substantive issues," and that "[t]he preponderance standard ensures that before admitting evidence, the court will have found it more likely than not that the technical issues and policy concerns addressed by the Federal Rules of Evidence *have been afforded due consideration.*" *Bourjaily*, 483 U.S. at 175 (emphasis added).

[10] 293 F. 1013, 1014 (1923).

[11] *Daubert*, 509 U.S. at 588 (citing *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 169 (1988)).

dence, and emphasized that the inquiry demanded by those rules is "a flexible one," one which focuses "solely on principles and methodology, not on the conclusions that they generate." [12] Thus, in addition to prescribing fluid and general standards for the admission of scientific testimony, *Daubert* also described the trial court's role as that of a "gatekeeper" who should exercise broad discretion in admitting scientific testimony that could later be tested by "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof . . . ." [13] As the Third Circuit has stated, plaintiffs do not "have to prove their case twice—they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are *correct*, they only have to demonstrate by a preponderance of evidence that their opinions are reliable." [14]

Neither party disputes that, at the beginning of the *Daubert* hearing, the district court told Jim Rothschild, counsel for Therm-O-Disc, "[y]ou have the burden of proof" with regard to Rodems's testimony.[15] However, counsel immediately corrected the district court on this point,[16] and from then forward it appears that the district court understood both the demands of *Daubert* and its own role as "gatekeeper," [17] and conducted the hearing accordingly. Immediately after the objection, the district court withdrew its call for Mr. Rothschild to come forward and show that Rodems's testimony was not admissible, and called Rodems himself to the stand o explain the basis for that testimony. This Rodems did under both direct and cross-examination. After several hours of testi-

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12 *Id.* at 594-95.

13 *Id.* at 596.

14 *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3d Cir. 1994) (emphasis in original).

15 J.A. at 4.

16 *Id.*

17 *See, e.g., id.* at 100; 102.

mony, the district court determined that, although it had some reservations about the proffered basis for Rodems's opinion, "the defendant has failed to establish . . . [that] Mr. Rodems relied upon a scientific principle that was not valid." [18]

Therefore, we are satisfied that an examination of the record shows that no improper burden-shifting took place. Clearly, the court called upon Maryland Casualty to meet its burden of production by coming forward with evidence to support its contention that Rodems's testimony would be both reliable and helpful. When this was presented, Therm-O-Disc was given the opportunity to rebut, but was unsuccessful in persuading the court that Rodems's testimony was not as reliable or helpful as Maryland Casualty claimed.

From a review of the record, we conclude that the general process contemplated by *Daubert* took place in the hearing, and that Maryland Casualty squarely bore the burden of production. Therefore, we decline to reverse the district court's decision on this ground.

B.

Therm-O-Disc also claims that the district court failed, in contravention of *Daubert*, to take into consideration certain factors in making its decision to admit Rodem's testimony. Specifically, Therm-O-Disc argues that there is no evidence in the record that the district court considered any of the "four non-exclusive 'general observations' that *are to be* evaluated by the trial judge" [19] pursuant to a *Daubert* inquiry.[20] But here again, we find that Therm-O-Disc has misread *Daubert*, and decline to disturb the district court's decision on this ground.

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[18] *Id.* at 184.

[19] Appellant's Br. at 24 (emphasis added).

[20] *See Daubert*, 509 U.S. at 593-95.

In *Daubert*, the Court established two factors that "the trial judge must determine" [21] before scientific expert testimony can be admitted. Those factors are, as stated above, (1) whether the testimony is based on "scientific knowledge" (i.e. knowledge grounded "in the methods and procedures of science"),[22] and (2) whether the testimony will be helpful to the trier of fact. The *Daubert* court described this mandated inquiry as "a preliminary assesment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." [23]

However, beyond this inquiry, the *Daubert* court expressly declined to require consideration of any other specific factors, stating that "[m]any factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test." [24] The *Daubert* court did make what it termed "general observations" [25] regarding what a judge should keep in mind in determining the admissibility of expert scientific testimony, but it is clear that these "observations" do not constitute the mandatory criteria described by Therm-O-Disc.[26]

Daubert clearly contemplates the vesting of significant discretion in the district court with regard to the decision to admit expert scientific testimony. Beyond establishing the two criteria of reliability and helpfulness, the Court has left the means by which these criteria are evaluated

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21 *Id.* at 592.

22 *Id.* at 590. As stated above, "scientific" is often considered synonymous with "reliable." *See, e.g.*, Kenneth R. Foster & Peter W. Huber, *Judging Science: Scientific Knowledge and the Federal Courts* 15 (The MIT Press 1997).

23 *Daubert*, 509 U.S. at 592-93.

24 *Id.* at 593.

25 *Id.*

26 *See* Appellant's Br. at 24; *see also Daubert*, 509 U.S. at 598 (Rehnquist, C.J., concurring in part and dissenting in part).

to the sound discretion of the district judge. This is apparent not only from *Daubert* itself,[27] but from subsequent Supreme Court precedent, holding that abuse of discretion is the proper standard by which evaluations of proferred evidence should be reviewed.[28] In addition, this circuit has taken the position that the *Daubert* court "was not formulating a rigid test or checklist," and was "relying instead on the ability of federal judges to properly determine admissibility." [29]

Thus, we reject Therm-O-Disc's contention that, beyond reliability and helpfulness, there are further considerations a district court *must* make in order to comply with the

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[27] *See Daubert*, 509 U.S. at 593 ("We are confident that federal judges possess the capacity to undertake this review.").

[28] *Joiner*, 118 S. Ct. at 517.

[29] *Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1384 (4th Cir. 1995) (citations omitted). *See also United States v. Bynum*, 3 F.3d 769, 773 (4th Cir. 1993) ("The [*Daubert*] Court emphasized that it was prescribing a 'flexible' rule, one committed, as are most questions of admissibility of evidence, to the discretion of the district courts."). Therm-O-Disc relies on *United States v. Powers*, 59 F.3d 1460 (4th Cir. 1995), for the proposition that, in this circuit's reading of *Daubert*, there are four factors "the Supreme Court directed trial courts to consider when evaluating the scientific validity of proposed evidence:

> (1) Whether the theory or technique used by the expert can be, and has been, tested;
>
> (2) Whether the theory or technique has been subjected to peer review and publication;
>
> (3) The known or potential rate of error of the method used; and
>
> (4) The degree of the method's or conclusion's acceptance within the relevant scientific community."

Powers, 59 F.3d at 1471 (citing *United States v. Dorsey*, 45 F.3d 809, 813 (4th Cir. 1995)).

While we agree that this language in *Powers* would appear to make consideration of the four factors mandatory, we recognize that *Dorsey*, which *Powers* quotes for these factors, expressly states that "trial courts *may* consider several factors," and lists them accordingly. *Dorsey*, 45 F.3d at 813 (emphasis added).

demands of *Daubert*. Further, in the present case, we are satisfied that the district court did not abuse its discretion in admitting Rodems's testimony.

As Maryland Casualty notes in its brief, Rodems is an electrical engineer with over twenty-five years experience in analyzing switch failures. Through his testimony, Rodems established that his opinion was based on his examination of the conditions inside the disputed switch and the application of principles of electrical engineering to those conditions.[30] Rodems was able to cite numerous works of technical literature that he alleged supported his mode of analysis,[31] and testified that his opinion regarding electrical failures has been admitted by at least one other district court.[32]

Based on this evidence, we hold that the trial court did not abuse its discretion in admitting Rodems's testimony. Maryland Casualty came forward with ample evidence from which the district court could have made its "preliminary assessment" of reliability and helpfulness, and the district court clearly did not find that Therm-O-Disc's rebuttal was sufficient to overcome that evidence. As the matter was within the district court's sound discretion, we find that it committed no error in deciding to admit the testimony.

II.

We next consider Therm-O-Disc's contention that Maryland Casualty did not prove a causal link between the thermostat and the fire in the Gitelson home, and thus that Therm-O-Disc was entitled to judgment as a matter of law. Under Maryland law, which applies in this diversity case, to recover in strict liability for a manufacturing defect, a plaintiff must establish, *inter alia*, a causal rela-

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[30] J.A. at 10; 16; 23-24; 140.

[31] *Id.* at 16-18.

[33] *See id.* at 294-306.

tionship between the claimed defect and the injury.[33] There is no question that the offered proof must rise above the level of speculation or conjecture.[34] Any facts that establish proof greater than speculation or conjecture, however, create a question for the jury.[35] Furthermore, proximate cause may be established by circumstantial evidence.[36]

In this case, the jury heard Rodems's theory that the thermostat was defective and caused the fire. Maryland Casualty introduced other evidence that ruled out any other cause of the fire. Under these circumstances, it was left to the jury to determine the question of causation, which it resolved in favor of Maryland Casualty. Examining the evidence in the light most favorable to Maryland Casualty, we hold that the jury properly reached its verdict.

III.

Finally, Therm-O-Disc disputes the district court's admission of Mrs. Gitelson's testimony concerning her damages. It argues that expert testimony was required to establish the value of Mrs. Gitelson's household goods.

Mrs. Gitelson testified as to the value of her household possessions, including the following: a $3,500 blouse, two $2,000 dresses, several dresses worth $1,000 or more, sixty sweaters and pairs of shoes valued at over $200 each, two sofas worth a total of $25,000, a shower curtain valued at almost $1,900, and other similarly expensive items. In *Lakewood Engineering & Manufacturing Company v. Quinn*,[37] the Maryland Court of Appeals took

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[33] *Jensen v. American Motors Corp.*, 437 A.2d 242, 247 (Md. App. 1981).

[34] *Id.* at 245.

[35] *C & K Lord, Inc. v. Carter*, 536 A.2d 699, 709 (Md. App. 1988).

[36] *McSlarrow v. Walker*, 467 A.2d 196, 200 (Md. App. 1983).

[37] 604 A.2d 535 (Md. App. 1992).

note "of the long-standing rule that an owner of property can testify as to its value."[38] Under Maryland law, a homeowner can testify as to the fair market value of common consumer goods, which will usually be close or equal to their replacement cost. Expert testimony, however, is required to establish the value of unusual items such as rare books or art work.[39]

Therm-O-Disc argues that the items Mrs. Gitelson lost in the fire were so unusual as to require expert testimony. Therm-O-Disc's position confuses the nature of the goods with the quality of the goods. While the goods in question were clearly expensive, they were indisputably common, household goods. Thus, we hold that, under *Lakewood*, no expert was required, and that Mrs. Gitelson's testimony was sufficient to establish her damages.

IV.

For the foregoing reasons, the judgment of the district court is affirmed.

AFFIRMED

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[38] *Lakewood Eng'g. & Mfg. Co. v. Quinn*, 604 A.2d 535, 542 (Md. App. 1992).

[39] *Id.* at 542-43.

UNITED STATES DISTRICT COURT
DISTRICT OF MARYLAND

January 29, 1996

MEMO TO COUNSEL RE:
Maryland Casualty Co., et al.
v. Therm-O-Disc, Inc., et al.
Civil No. JFM-93-1132

Dear Counsel:

I have reviewed defendant's motion for judgment after trial and its motion to reduce judgment.

Defendant's motion for judgment after trial is denied. The motion does not raise any issue that I did not carefully consider prior to and during the trial. Although as a fact finder I very likely would have reached a different conclusion than did the jury, I am persuaded that plaintiffs presented sufficient evidence of a defect, that the lapse of time between the date of manufacture and the fire did not disprove a defect and that Mr. Rodems' testimony met the *Daubert* test.

Defendant's motion to reduce judgment is, however, granted. Both under the terms of the release between plaintiffs and Whirlpool Corporation and under Maryland law the judgment against defendant must be reduced by 50%. *See* Maryland Code, Art. 50, § 20; *Jones v. Hurst*, 54 Md. App. 607 (1983); *St. Louis v. Beckles*, 81 Md. App. 41 (1989). Indeed, the law on the point appears to be so clear that I am disappointed that plaintiffs have opposed the motion.

Despite the informal nature of this ruling, it shall constitute an Order of Court, and the Clerk is directed to docket it accordingly.

Very truly yours,

/s/ J. Frederick Motz
J. FREDERICK MOTZ
United States District Judge

cc: Court File

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

Civil No. JFM-93-1132

MARYLAND CASUALTY COMPANY, *et al.*

v.

THERM-O-DISC, INC. *et al.*

ORDER

For the reasons stated in the memorandum to counsel being entered herewith, it is, this 29th day of January, 1996,

ORDERED:

1. Defendant's motion for judgment after trial is denied;

2. Defendant's motion to reduced judgment is granted; and

3. The judgment entered in favor of plaintiffs against defendant Therm-O-Disc, Inc. is reduced to $317,946.50.

/s/ J. Frederick Motz
J. FREDERICK MOTZ
United States District Judge

APPENDIX C

Filed March 24, 1998

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 96-1192
CA-93-1132-JFM

THE MARYLAND CASUALTY COMPANY,
as Subrogee of Eileen K. Gitelson;
EILEEN K. GITELSON;
SELMA INVESTMENT CORPORATION,
Plaintiffs-Appellees

v.

THERM-O-DISC, INCORPORATED,
Defendant-Appellant

and

WHIRLPOOL CORPORATION;
EMERSON ELECTRIC COMPANY,
Defendants

ON PETITION FOR REHEARING WITH
SUGGESTION FOR REHEARING IN BANC

The appellant's petition for rehearing and suggestion for rehearing in banc were submitted to this Court. As no member of this Court or the panel requested a poll on the suggestion for rehearing in banc, and

The panel considered the petition for rehearing and is of the opinion that it should be denied. The denial of rehearing is entered by a quorum of the panel pursuant to

28 U.S.C. 46(d). Judge Russell died prior to disposition of the petition for rehearing.

IT IS ORDERED that the petition for rehearing and suggestion for rehearing in banc are denied.

For the Court,

/s/ Patricia S. Connor
Clerk

APPENDIX D

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

Civil Case No. JFM-93-1132

MARYLAND CASUALTY COMPANY,
As Subrogee of AKA
EILEEN K. GITELSON, *et al.*,
Plaintiffs

VS.

THERM-O-DISC, INCORPORATED,
Defendant

Baltimore, Maryland
November 27, 1995

The above-entitled case came on for trial before the Honorable J. Frederick Motz, Chief Judge.

* * * *

[2] PROCEEDINGS

THE CLERK: Before the Court is Civil Case Number JFM-93-1132, Maryland Casualty Company, et al. versus Emerson Electric Company, et al. This matter is now before the Court for a hearing before jury selection.

Counsel, please identify yourselves for the record.

MR. OPALISKY: Mark Opalisky for the plaintiffs.

MR. ROTHSCHILD: Jim Rothschild for the defendant, THERM-O-DISC.

MR. AIST: And James Aist also for THERM-O-DISC, Your Honor.

THE COURT: As soon as the jury is ready, we will pick the jury and then suspend this hearing and decide what to do at that point, but let's get started.

We are here on essentially a Motion In Limine filed by the defendant in regard to the admissibility of the proffered expert testimony, Mr. Rodems. We are going to have a Daubert, D A U B E R T, type hearing at this point.

I understand the plaintiffs object to holding such a hearing on the grounds that plaintiffs' counsel may have to cross-examine Mr. Mason in areas that he would prefer to wait unitl trial to do. That, unfortunately, is the nature of Daubert, but sometimes [3] things have to be done in advance of trial.

I do not accept the proposition that Daubert simply doesn't apply here. I do think I have to make some kind of determination, so, therefore, I am going to have to hear some testimony. To the extent to which plaintiffs' counsel chooses to cross-examine Mr. Mason, it is entirely up to him.

Let me say also that recognizing I have a gatekeeping role, I am going to do the very best that I can to make a determination based upon what I hear today.

* * * *

[4] Let's get started. I've read the papers. Mr. Rothschild, I understand you want to go forward. You have the burden of proof.

MR. OPALISKY: Your Honor, might I just make one note for the record? That is that under Daubert, the gatekeeping role, as I understand it, is to make sure that Mr. Rodems' opinion is based on reliable criteria. I think it is fundamentally unfair if their expert goes first to say what he thinks Mr. Rodems' opinions is versus Mr. Rodems to explain to the Court his opinion, the basis for it.

THE COURT: Do you want to go first with that?

MR. OPALISKY: I think that might be fair, Your Honor.

MR. ROTHSCHILD: Your Honor, my only concern is I think we are dealing with the opinion that he gave in his reports and the opinion he gave in his deposition.

THE COURT: That is dramatically different. He [5] is complaining that your expert people are giving new opinions. That is a whole different issue. If he is going to give a different opinion, then you want to know that now anyway because you are going to move to strike it on the ground that it is different to begin with, so why don't we go ahead with Mr. Rodems then.

MR. ROTHSCHILD: Whatever the Court prefers.

THE COURT: Go ahead. Mr. Rodems, please come forward.

THE CLERK: Please raise your right hand.

JAMES D. RODEMS

a witness called on behalf of the plaintiffs, having been previously duly sworn, was examined and testified as follows:

* * * *

THE CLERK: Please state your name for the record and spell your last name.

THE WITNESS: James D. Rodems, R O D E M S.

* * * *

[7] Q Have you examined thermostats in the past during your career?

A Yes, sir, many.

Q Approximately how many times?

A At least 20 or 30 times.

Q The principles regarding thermostats and the heat generated, have you focused on those principles in other examinations?

A I have.

* * * *

[16] Q Sir, are there any noted or authoritative references that you have an understanding that talks about the various sources of heat and the heat increasing?

A Yes, sir.

Q Would you explain to the Court what those sources are?

A I have some references here, Handbook of Insulating Materials that talks about the normal operation of phenolics and materials of that sense or [17] that kind.

Then we have the Materials Handbook, which talks about contact materials and arc erosion and phenolics and the temperature, operating temperature ranges.

I have a third reference, Encyclopedia of Physics which addresses arcs and sparks and the plasma ionized gas density related thereto.

I have another reference called Applying Precision Switches by Lockwood, which also talks to plasma and arcs.

I have another reference called Understanding Electric Arcs, which talks about ionized air and insulation surface tracking, about flashover and the melting of droplets of the conducting material causing insulation heat damage in the region of two to 3,000 degrees Fahrenheit.

I have another reference, again Lockwood, which talks about switch destruction and insulation resistance loss, and the same Lockwood reference, which is an 1884 document, talks to insulation breakdown in these switches.

* * * *

[24] CROSS-EXAMINATION

BY MR. ROTHSCHILD:

* * * *

]25[Q Isn't it a fact, sir, that you were aware of no literature that talks about an arc creating, self-destructing a thermostat, creating self-destruction in a thermostat that has those elecrtcial characteristics?

A That I was what, sir?

Q There is no literature or any studies showing that internal heating or arc damage can cause a thermostat with those characteristics to self-destruct; isn't that correct?

A No, there is literature that discusses that.

Q Isn't it a fact that when you were at your deposition you agreed there was no specific literature on the issue of a thermostat, with the type of thermostat we are talking about here, can self-destruct because of internal heating or arc damage? We talked about this thermostat as opposed to arc damage in some other application?

A Are we restricting this to this particular?

Q Yes, we are.

A Well, I have a reference in there now that speaks to thermostat failures which are due to overheating of various parts of the thermostat.

Q That wasn't my question. My question is, isn't it a fact that there is no literature in the field or [26] any studies about showing that internal heating or arc damage can self-destruct a thermostat? Isn't that correct?

A I think you are putting words in my mouth, sir. Mr. Mason's book itself addresses the effects of—

Q I am talking about in this application, in the application of a thermostat, not arcing in general in other types of electrical components, I am saying in this thermostat, the Gitelson thermostat, this 21 amp, 240 volts, isn't it a fact there is no literature and no report from any studies showing that that type of thermostat with those characteristics has ever self-destructed because of internal heat or arcing; isn't that correct?

A That is not correct.

Q Okay. Would you give me a reference to one study?

A Mr. Mason himself, in paraphrasing, or I should say using Mr. Lockwood's '84 report, specifically talks about how the switch can be destroyed.

Q Does he talk about that it can be destroyed from —did he talk about any destruction of a swich from internal heating that causes it to self-destruct, that it reaches such temperatures that it causes it to self-destruct?

[27] A It talks about arcing.

Q I know he talks about arcing in general. I am asking about this application, not general principles of arcing. I am asking whether there is any literature that supports

your theory that in this application, in a switch of this size, with this characteristics, that it has ever been noted that one has self-destructed because of excessive internal heat or because of excessive arcing?

A Sir, it is common knowledge that millions of these switches are used, and they fail.

Q I am asking you if you can show me a report anyplace, from anyone which has documented that one of these switches has failed in the manner, this type of switch has failed in the manner that you say it has failed in this case?

In fact, do you recall testifying at your deposition that there were no such studies?

A Well, at this point, sir—

Q Question, page 381, have you ever seen it described in any literature involving the safety overtemperature thermostat?

Answer, I don't think so, but I don't recall.

Do you recall giving that testimony?

A Yes, sir.

[28] Q Isn't it a fact that you have never seen described in any literature that a safety overtemp thermostat with this thermostat's characteristics has ever failed because of excessive arcing or excessive internal heat damage, heat?

A Sir, I would specifically refer you to your own client's test, in which you specifically—

Q I am asking you—

* * * *

THE WITNESS: Only in a general sense of problems of that nature with all switches.

BY MR. ROTHSCHILD:

Q Have you, yourself, conducted any tests in which you have been able to have a thermostat, this type of thermostat, a 60T, with these elecrical characteristics, in which you had it run and that it is self-destructive because

of either internal heating or because of arc damage? Have you conducted any such tests?

A On this specific thermostat, no. Others, yes.

[29] Q Do you have the ability to conduct such tests?

A I do.

Q In this case, you did not conduct any testing to confirm your two theories that there was either excessive internal heating or there was excessive arc; is that correct?

A I leaned on the exemplar and on the unit that is part of this.

Q I'm asking you whether you conducted any tests. I wish you would answer my question.

You had the ability to conduct such tests. Did you conduct any such tests to see whether your opinions were borne out by testing?

A I did not conduct a life cycle test on this unit.

Q Isn't it a fact that the only time you have ever seen any type of arc damage was in switches that were in much better, bigger electrical, had much greater electrical current going through them, such as circuit breakers, relays and power panels?

A That is wrong sir.

Q Do you recall testifying in your deposition, where I asked you, have you ever seen any literature or periodicals, anyone else expressed a similar opinion with regard to destruction of a thermostat, that it was [30] due to an arc of a plasma arc?

Answer, it sustained its plasma arc? I've seen it in other switches. I don't ever recall seeing it in one of these.

What kind of switches have you seen it in?

Answer, circuit breakers, relays and power panels.

Do you recall giving that testimony that the only time you have seen it or seen it in the literature was in bigger applications, such as circuit breakers, relays and power panels?

A Sir, 21 amps is not considered a small application.

Q I'm asking you whether you gave that answer, that the only time you had seen it before was in circuit breakers, relays and power panels?

A I gave you that answer, but that doesn't restrict it to this unit.

Q Isn't it a fact that you testified you had never seen it happen in this unit?

A Only insofar as the exemplar.

Q Well, the exemplar you are talking about is something from another case; isn't that correct?

A You asked me whether I have seen it or not.

Q Have you ever seen a thermostat that looks like [31] the Gitelson thermostat, anybody ever report that a thermostat that had the characteristics of the Gitelson thermostat self-destructed from internal heating or from excessive plasma arc?

A Yes, sir, and I gave you that answer in my deposition.

Q Where—in your deposition you said that you hadn't seen anything in a safety overtemperature thermostat; isn't that correct?

A That is not correct, sir.

Q Where, would you give me one example of where anybody has reported this type of thermostat with these types of characteristics has ever destructed, self-destructed from either excessive internal heating or from a plasma arc internal to the switch case?

A You will also look in my deposition and see that I cited a case in which we were unable to get the documents from. That was the Fairbanks Farm case in which a similar thermostat was blamed.

Q My question is are there any reports in any periodical, recognized periodicals in the field about this, yes or no?

MR. OPALISKY: About what?

Q Showing self-destruction of a thermostat as you postulated.

[32] THE COURT: Overruled.

A My references do indicate and imply that effect.

Q Do the specifically discuss it in this application, your records?

A They discuss the generic effects of arcing, contact heating, spattering of metal against, the molten metal against the inside of a switch and the pyrolyzation and arc tracking inside a switch, all of which generate heat and all which lead to a destruction.

Q They discuss general principles, but none of your references discuss that anything like that has occurred in an application such as this; isn't that correct?

A I can't answer that question, sir, because I can draw from general principles, and all of the exact cases I have looked at in the literature, and it is relatively easy to draw the conclusion of what caused this problem in those references.

Q I am asking you whether the references, the references that you relied on discussed whether those general principles can create—in fact, isn't it a fact that those references you rely on do not discuss that the general idea of the arcing or whatever could lead to destruction in a thermostat of this characteristic? Isn't that correct?

[33] A No, that is incorrect. The references clearly point us in the direction of what are the sources of heat inside that unit.

Q Do they report that, do they report that what happened, specifically, are there any reports of what happened in this application? Is there anything, any report of where it has happened, anybody who had done any testing, anything in which this application, that is what we are talking about, the Gitelson 60T thermostat with these characteristics, any of the millions and millions and millions that have ever been made with similar switches of the same characteristics have ever self-destructed because of internal heating or an internal arc plasma.

MR. OPALISKY: Judge, may I object on two grounds? One, I think it has been answered several times. Two, under Daubert, the test is not for him to point out someplace where the conclusion is there, but the principles in reaching that conclusion.

THE COURT: I think that that is right. It would be a lot easier, when you answer the question, if the answer is a simple know, just say no. The relevancy of it is another point.

THE WITNESS: If I understand what the question is—

[34] THE COURT: The answer is obviously no. He is talking about the Gitelson, he is talking about the Gitelson thermostat.

THE WITNESS: I will go along with that, sir.

BY MR. ROTHSCHILD:

Q In fact, isn't it a fact that in your own experience you have never seen a switch that self-destructed in the manner that you postulate the Gitelson's switch self-destructed?

A That is wrong. I refer you back to the Fairbanks case. They have the exact, very similar set of circumstances.

Q But you don't have any information on that to provide us, you weren't able to provide any—

A It is under some kind of settlement agreement which restricts the distribution of the knowledge that I don't have any control over.

Q Now, in fact, isn't this the first case that you ever indicated, related the destruction of internal parts of a thermostat to a plasma arc?

A I didn't say that.

Q Didn't I ask you in your deposition? Is this the first time you've ever given such a theory of how a moveable arm was being destroyed in a safety overtemp thermostat, and your answer is, that's correct?

[35] A The only exception to that, sir, is in the Fairbanks case.

Q When you were deposed and you were under oath, you didn't give any exception. You said this is the only example of where you've ever seen an arc that destroyed the internal parts of a thermostat. I will read the answer, question and answer to you again.

Didn't you testify to that under oath at your deposition?

A Would you kindly read the question again, please?

Q Yes. The question is, is this the first time you've ever given such a theory of how a moveable arm was being destroyed in a safety overtemp thermostat?

Answer, that's correct.

A I agree with that.

MR. ROTHSCHILD: I have no others questions for Mr. Rodems.

THE COURT: Anything further?

* * * *

[37] RECROSS EXAMINATION

BY MR. ROTHSCHILD:

* * * *

[39] Can you tell me, Mr. Rodems, do you know anything about the fire in that case?

A Sir, I have no idea, just never could relate this to a case number in my laboratory.

Q So you don't know whether the fire in that case was outside the dryer or inside the dryer?

A I have no idea, sir.

Q You don't know how the thermostat was removed from the dryer; is that correct?

A I do that. Two screws were taken out.

Q You didn't remove it, did you?

A No.

Q You don't know what, if any—

THE COURT: He knows nothing, except that he found it on the shelf, an exemplar.

THE WITNESS: Precisely.

THE COURT: The lines that it has and the pattern, wear pattern that it has, right?

THE WITNESS: Yes, sir. That is the sum and substance.

BY MR. ROTHSCHILD:

Q Do you know how long that thermostat had been in use prior to, when it manufactured?

A No, sir.

* * * *

[41] [WELLS]

DIRECT EXAMINATION

BY MR. ROTHSCHILD:

* * * *

[43] Mr. Wells, how many of these 60T thermostats were made in 1983 by THERM-O-DISC?

A In 1983, this particular part number, there were around one and a half million made, one a third to one and a half. Total number of controls made of this type of family were around 15 million in 1983.

Q How many had been made of this type, the 60T, since 1993?

[44] A This particular part number ran about ten million over the past 10, 15 years.

Q Have you, had Therm-O-Disc gotten any reports over the last ten years of any thermostats self-destructing because of internal arcing or internal heating?

A No.

Q Has THERM-O-DISC gotten any reports that there had been any problems with internal heating or arcing because contacts were misaligned?

A No.

* * * *

[46] Q Did you, after that, undertake to do any tests to determine whether or not, even if those conditions existed, you would have, they would be a mechanism for the thermostat to self-destruct?

A Yes. We did some tests to demonstrate what would happen.

Q Would you tell the Court what tests you did?

A We built some controls and took some effort to make sure that the contacts did misalign. We built three sets of controls, some with contacts properly aligned, some of them with the contacts overhung, as he suggested might have happened, and some of them with [47] the contacts toed severely, as he suggested might have happened.

Then we took those controls and we put them on a life test stand, where we simply operate the control on and off, on and off, and did two series of those tests.

One we did with the control operating at a 21 amp, 240 volt load, electrical load, as would be found in the clothes dryer. Then we did another series of tests where we had the controls operate at 66 amp, 240 volt load. That would be three times as heavy a current and substantially more heating generated at the contacts because of just the electrical load.

* * * *

THE COURT: I don't need that for this purpose. For this purpose I know what he did.

You ran tests which contradicted his theory?

THE WITNESS: Yes.

* * * *

BY MR. ROTHSCHILD:

[48] Q Now, are you familiar with the literature in the field with regard to switches?

A Yes.

Q How long have you been involved with THERM-O-DISC and the manufacture of switch and design of switches such as the 60T?

A I have been working with THERM-O-DISC now for 12 or 13 years. As far as my career as a whole, it has been 23, 24 years working with controls and equipment that uses controls.

Q Are you aware of any literature in the field which indicates that a thermostat with an electrical load of 240 volts, operating at 21 amps, has self-destructed or could

self-destruct because of internal electrical heating from various sources or because of a buildup of arc heating?

A No, I am not aware of any literature that refers to that phenomenon.

Q Are you aware of any testing that has shown that that can occur?

A No, I am not.

* * * *

[56] JOHN R. MASON

a witness called on behalf of the defendant, having been previously duly sworn, was examined and testified as follows:

THE CLERK: Please be seated. Please state your name for the record and spell your last name.

THE WITNESS: Yes. My name is John R. Mason, M A S O N.

DIRECT EXAMINATION

BY MR. ROTHSCHILD:

* * * *

[58] Q Would you explain to the Court why, going through the various things that Mr. Rodems said about heat buildup, resistance heating, arc heating, why you don't agree with that in this application?

A Certainly. Resistance heating, arc heating, the general principle is correct, but in this particular switch, this type of switch, it is not a valid theory. You can have arc damage in very large complex switches. In fact, Mr. Rodems mentioned circuit breakers, switch gear, power switches, very large, complex, high current, high amperage devices. There is certainly evidence of arc damage, as Mr. Rodems has indeed testified he has seen before, arc damage in these types of switches.

The arc in just a small switch, a small single-pole, single-throw switch is so microscopic, so minuscule that

it would not cause the damage that we are talking about in this particular device.

* * * *

[62] Q Now what about the characteristics—you can resume the stand.

Mr. Rodems referenced to you as a source as to the various types of heating that can occur. Resistance heating he talked about and the heating from arcing, and just the ambient air heating.

Do you have an opinion as to whether those basic principles, taking those basic principles from your book, one could opine, to a scientific basis, that in this application that type of heating could get hot [63] enough to actually do damage to the internal structure of the thermostat and cause it to self-destruct, given the characteristics of this thermostat?

A No, there is no scientific evidence that that holds at all.

Q Would you explain to the Judge why? What about this application that would not make it, would not allow the general principles of arcing that may apply in other applications apply here?

A Again, it is a factor of size. The general principle holds, as I mentioned before, contact resistance, switch resistance are present in all switches. This particular switch, 21 amps, 240 volts is striking a very, very small arc.

Let me illustrate it this way. In large power switches, like circuit breakers, switch gears, that sort of thing, switch designers deliberately build in devices to extinguish the arc. They call it arc shoots, arc runners. These devices are built into the power switches because it is going to strike a large arc.

If you look at the cross-section or the actual switch itself in this device, there is no such devices in there to extinguish the arc. The switch is designed to extinguish the small arc across that gap. There is [64] no additional design necessary.

THE COURT: What did you say? What is done, what is done in a smaller switch?

A Nothing. There is no design extension to extinguish the arc in these devices such as opposed to a power switch. There is no additional device in here to extinguish the arc.

Q Why is that?

A Because the arc is very small. The gap, once it is open, the gap between the switch contact is very small, so we are not going to have a runaway arc or moving arc of any kind in this type of device. You do in the power switches.

Q What are you talking about in terms of current load in power switches?

A Oh, power switches, these are very large power switches, you could be switching 500,000 amps, 2,000 amps for power distribution systems primarily, very large, heavy-duty, very complex switches.

Q Now did you see in Mr. Rodems' deposition that he postulated a theory in which I think he said there was a catastrophic plasma arc that occurred in this switch?

A Plasma arc, yes.

Q Do arcs occur—I think you testified that arcs do occur in switches; is that correct?

[65] A An arc must occur in a switch in order for the switch to be disabled or disconnected.

Q Have you ever heard of the concept of a catastrophic plasma arc in a switch such as this?

A No, I have not.

Q Is there any, in your opinion, based—there is reference that Mr. Rodems makes to your book, in which he talks about arc and arc damage. Then it says therefore, it occurs there.

Do you agree that general discussions or what arcs can do in general support an opinion that there was a catastrophic plasma arc, and this could occur in this switch?

A No.

Q Why not?

A Well, number one, there is no scientific support for the catastrophic arc theory.

Number two, the size of the arc in this particular switch, as it is being opened, it doesn't lend itself to any runaway catastrophic or cascading catastrophe involving the arc. We are talking a matter of comparison of size, I believe, is what it comes down to.

Q Now, when did you publish this Switch Handbook?

A December, 1993.

[66] Q In doing the research for that, did you ever come across any studies, reports information from any source that, one, indicated that there could be internal heating up to 1400 to 1700 degrees in a switch of this type?

A Other than very localized, microiscopic heating, no.

Q That there could be enough heating in a switch of this type that could cause its internal destruction?

A No.

Q Did you ever come across, in doing the work for this book and references, any reports or any literature indicating that a switch of this type or this characteristic, a catastrophic plasma arc could occur that could explode and blow the switch apart?

A No.

Q Had you ever even heard, before reading Mr. Rodems' deposition, had you ever even heard of either of these two theories postulated by anyone?

A No, I have not.

Q Are you aware of any testing that has been done by anyone, including THERM-O-DISC, which supports or contradicts Mr. Rodems' theory?

What, if any, value do you place in the Therm-O-Disc life cycle test they did with misaligned [67] contacts?

A Well, the testing itself seemed to be done under proper controls, very eloquent testing. I think the test results indicate that there is no, even with severely misaligned, deliberately and severely misaligned switch con-

tacts, that the heating is not anything that would cause this catastrophe.

Q Now, how many switches would you say of this type, basic switches—you said it was the same type of switch that occurs in light switches—how many would you say are currently in use?

A Oh, boy.

Q Just a basic figure.

THE COURT: Lots.

A Billions.

MR. OPALISKY: Billions, certainly.

Q Have you ever heard of a report of any one of those switches which is similar to how this operates, whether it is in a thermostat or in a light switch, any reports that any one of those had self-destructed because of a catastrophic plasma arc?

A. No. If the theory was correct, I think all of us in the room, maybe we would either have personal experience or know of exploding wall switches happening, so there is no validity to it.

[68] Even if you assumed, I just want you to assume, if you assume that with the billions of switches that are in operation, some of them, for some reason, may have been misaligned in some way, if Mr. Rodems' theory was correct, and that there are some out there, let's say hundreds or thousand of the billions were misaligned, what would have happened if his theory was correct on what happens when there is a misalignment?

A If the theory was correct, you would turn the wall switch on in your house and there would be some sort of a catastrophic explosion of the switch itself.

Q Okay. Or with regard to his theory that it would cause tremendous buildup in temperature, 1400 to 1700 degrees, what would happen there?

A I suppose it might ignite. I might add that I have taken apart some, in the course of my working life, some standard wall switches. They are produced with a lot less design eloquence than this particular device here.

Q In your opinion, as—I think Mr. Rodems made reference also to some other sources in the field. I think one of them is someone on switches that you even use in your book. What is his name?

A Mr. Lockwood.

Q Lockwood, yes. Does he, in his publications, [69] report any incidences where an application of this size, you could either have destruction of a switch because of excessive internal heating or a catastrophic arc?

A No, no. He talks in generalities, in general principles that Mr. Rodems has discussed, but no specifics about this particular type of switch.

Q From a scientific basis, Mr. Mason, and dealing with, you know, how scientists reach conclusions in terms of methodology and analysis, can one take just a general principle and say it applies to all applications across the board?

A No, because there are always other variables involved in making those leaps of logic. It doesn't, it does not follow general principles. It is always specific to a paritcular case.

* * * *

[96] THE COURT: Do you want to put anything further on?

MR. OPALISKY: Not for purposes of defendant's motion, Your Honor.

THE COURT: Well, let me ask you. I mean in looking at Daubert, we don't have any test here that shows—and I don't care whether it is this exist thermostat. What I take it is a question of this switch, a switch, as I now understand you are supposed to say it, of this size; i.e., carrying or transmitting or whatever the word would be, this magnitude of current, there are no tests that you've produced and indeed, the only tests are those that Mr. Wells performed on this thermostat or more particularly, on the switch which showed that, under the theory of misalignment, the scenario as described by Mr. Rodems couldn't have happened. That is number one.

Number two, it is my understanding that the principles in the literature upon which Mr. Rodems is relying refer, it is a general principle, but there is [97] nothing in the literature that has been produced to me to show that it would apply to create heat essentially, arcing, and result in heat, in magnitudes anywhere near necessary to support Mr. Rodems' theory of the melting of the plastic, which has to be, I take it, up to, well, that has to be at 350 or 500. His theory is that it was up to 1400 to 1700; is that correct?

MR. OPALISKY: No, Your Honor, the arc itself. The arc is that high.

THE COURT: Okay. The arc is that high.

MR. OPALISKY: The arc is 1700 degrees. You are talking a minimal distance. That phenolic has to sense temperatures up around 400 degrees for it to shrink.

THE COURT: The question is where is there before me anything, either by a specific test or by anything in the literature, to support Mr. Rodems' opinion that that could have happened?

MR. OPALISKY: Well, Your Honor, I need to first, I guess, start back into it. For one, that is what Daubert deals with. It is showing a test because you are not able to analyze the product or to rely on other products you have analyzed. In this case, I submit even before the Daubert analysis applies of looking for tests or authoritative references, it has to be the type of forensic testimony, expert testimony that fits [98] into that category.

We get into the whole Frye test. There was a different test for scientific theories.

THE COURT: I don't want to hear the law. As I understand, there are various factors under Daubert. Two of them include test and testability, and here Mr. Rodems didn't conduct any tests to show that this could have happened the way he did it.

Now he didn't have to if there is, in literature, particularly peer review literature, a study showing the principle upon which he is relying is well-established.

What I have heard so far here is that yes, although there is a principle that this could happen, there is nothing in the literature to show that it happens when this magnitude of amperage is involved.

* * * *

[103] I have heard then testimony from Mr. Mason and from Mr. Wells that that principle does not apply, it does not apply to switches of the size, which I understand to mean, switches of the size means here magnitude of current that is involved in here, that it just doesn't happen, and that there is no support in the literature to support the proposition that it does happen.

So then one can argue, well, does there have to be support in the literature? I understand it is a fair question, but supporting the view expressed by the defendant, there are two things.

Number one, that Mr. Rodems himself had said on deposition that he had observed this to occur only in circuit breakers and other switches where the magnitude was greater and secondly, frankly, the common experience that if Mr. Rodems' proposition were true, one wonders why we don't have a lot more catastropic fires with switches, you know, where the current being transmitted is of 24 amps or is of a lesser magnitude.

That is where the record now is. On that record, frankly, I just think there is a missing gap then in Mr. Rodems' reasoning, which I am now invite the plaintiff to fill.

* * * *

[104] (Mr. Rodems resumed the witness stand.)

* * * *

[124]

CROSS-EXAMINATION

BY MR. ROTHSCHILD:

Q Mr. Rodems, you began your testimony by saying that you had seen many switches that had a catastrophic failure such as this one; is that correct?

A Circuit breakers, switches, thermostats, yes.

Q Isn't it a fact that at your deposition you testified just the opposite, that you had never seen a switch in a thermostat that had a catastrophic failure like this one?

A Quite the damage level, that is true.

Q Let me read you the question. In fact, you've never seen a catastrophic failure, arc failure in a thermostat like this before; isn't that true?

Answer, that's true.

Weren't you asked that question and didn't you give that answer while you were under oath on—

A Sir, that was—

Q Let me finish.

A Yes, sir.

Q On March 29, 1995. Pointblank, had you ever seen this type of catastrophic failure before in a thermostat? You said that you hadn't. Yes or no?

[125] A That is correct, sir, but you had me pinned in a corner. Let me answer.

Q No, no. I am asking you were you asked that question and did you give the answer.

THE COURT: You obviously asked the question and he gave that answer. Now you can explain. Go ahead.

A All during that deposition, sir, you kept insisting on a 60T11. Everything that I had done had to be was it a 60T11. I had never seen a 60T11 with that kind of damage, that's correct.

* * * *

[128] Q Right. Have you seen any articles or are you aware of any articles where anybody has done any tests to determine whether arc damage occurs at different current and amperage levels?

Are you aware of any articles that are published in which somebody has actually tested switches in [129] determining at what level is enough electricity for arc damage to occur and below what levels that arc damage does not occur?

A There are some studies that indicate that there are different degrees of damage, depending on how much current you have.

Q Do you reference any of those specific articles showing what the thresholds are for arc damage?

A You can draw an arc at—

Q No, I am asking you, do you have reference to any publications?

A I probably do. I don't have them with me.

* * * *

Q Do you have any references that you can tell us today of those articles which support your opinion that at 240 volts and 21 amperes, there would be arc damage, significant arc damage, unsafe arc damage when a thermostat of this type open and closes? Can you give me reference to any article that says that?

A I just referenced it.

Q No, I am talking about the specific amount of voltage in a thermostat.

A I can't recall that offhand, sir.

* * * *

[184] MR. ROTHSCHILD: Nothing else, Your Honor.

THE COURT: Mr. Opalisky, you don't have to cross-examine. I am persuaded by what I have heard this afternoon that we've descended into the area of opinion, that the defendant has failed to establish, short of your cross-examination, Mr. Rodems relied upon a scientific principle that was not valid. This is something we will describe for the jury. If I hear something else during the course of the trial that changes my mind, I will strike the testimony.

Now let's take up some of the other evidentiary issues while we are here. You can step down.

We have descended well into the area. If somebody lost respect—this isn't the first time in [185] the case the defendant thought they had a clear winner, and it didn't have it, I will say that.

Mr. Wells is here. I will say it. You thought you had a clear winner on Mrs. Gitelson's testimony and the housekeeper and everybody else. When you look at it in con-

text, things are never as black and white as everybody seems to think they are.

It could be that on the scientific principle you all will be able to persuade me that the same principle doesn't apply in the variables that exist, but you sure didn't establish it today, and I sure gave you enough time to do it.

(The Daubert proceeding concluded and other evidentiary matters were discussed.)

Supreme Court, U.S.
FILED
JUL 21 1998
OFFICE OF THE CLERK

No. 97-2068

In The

Supreme Court of the United States

October Term, 1997

THERM-O-DISC, INC.,

Petitioner,

v.

MARYLAND CASUALTY COMPANY, as subrogee of EILEEN K. GITELSON AND SELMA INVESTMENT CORP. and EILEEN K. GITELSON,

Respondents.

On Petition For Writ Of Certiorari To The United States Court Of Appeals For The Fourth Circuit

BRIEF IN OPPOSITION WITH APPENDIX

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QUESTION PRESENTED

1. Is there a compelling reason to review the *per curiam* decision of the United States Court of Appeals for the Fourth Circuit upholding a jury verdict in a property damage subrogation case based upon diversity of citizenship where the opinion creates no conflict among the circuit courts and where the court below correctly held that the trial court did not abuse its discretion by admitting expert testimony into evidence, finding that the experienced trial judge understood his role as gatekeeper, and he properly performed a preliminary assessment to ensure that the proffered expert testimony was reliable and would help the trier of fact?

STATEMENT UNDER RULE 29.6

Respondent Maryland Casualty Company is a fully owned subsidiary of the Zurich Insurance Group.

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OPINIONS BELOW

Respondents accept the opinions below as set forth in Petitioner's brief, but would note that the Opinion of the United States Court of Appeals for the Fourth Circuit in this matter is now reported at 137 F.3d 780, and is reprinted in Appendix A (App. "A"). Select pages of the *Daubert* hearing are reprinted in Appendix B (App. "B").

JURISDICTIONAL GROUNDS

Respondents accept the jurisdictional statement as set forth in the Petition.

STATEMENT OF THE CASE

A. Introduction

In the evening of December 31, 1991, the home of Eileen Gitelson was ravaged by fire. Her property insurance carrier, Maryland Casualty Company, paid pursuant to its policy of insurance and thereafter pursued a product liability action under Maryland law in federal court based upon diversity of citizenship. Following a two week trial, the jury returned a verdict for Respondents. The jury concluded that Petitioner manufactured a defective thermostat, which was a component part in a Whirlpool clothes dryer in the Gitelson home, and that the failure of the thermostat started the catastrophic fire.

Although several fire cause and origin experts placed the origin of the fire at the dryer due to a problem with the thermostat, Petitioner primarily focuses upon the

expert testimony of an electrical engineer, Mr. James Rodems, who examined the remains of the thermostat and testified regarding the specific reason it failed. Petitioner seeks this Court's discretionary review based upon a fundamental misconception of the respective roles of the federal trial courts and the courts of appeal under *Daubert* and *Joiner*, and a purported conflict among the circuit courts of appeal created by the *per curiam* opinion of the Fourth Circuit below. Contrary to Petitioner's assertions, however, the Fourth Circuit's opinion does not create any conflict with other circuit courts, and there is no "compelling" reason to grant this Court's discretionary review. Sup. Ct. R. 10.

Therm-O-Disc's Petition is, in essence, its fifth attempt to impose an unwarranted and restrictive reading of *Daubert* upon the lower federal courts.[1] Petitioner argues that the Fourth Circuit committed reversible error in affirming the trial court's admission of the expert testimony of Mr. Rodems. Mr. Rodems' primary opinion, which was based on his examination of the failed thermostat, his experience with the failures of similar thermostats and switches, his examination of the dryer and his reliance on published authoritative references, was that the thermostat overheated due to the misalignment of the thermostat's internal contacts. This misalignment of the

[1] Petitioner filed a motion *in limine* to preclude Mr. Rodems from testifying at trial, which resulted in the *Daubert* hearing that stretches 184 pages in the record. Petitioner thereafter filed post-trial motions raising the same issue, filed its appeal, and then filed a Petition for Rehearing En Banc before filing this petition.

contacts interfered with and redirected the flow of electric current (i.e., created excessive resistance heat at the contacts), causing the thermostat to overheat and fail.

B. Mr. Rodems' Opinions

Mr. Rodems is an electrical engineer who has over 25 years of experience in examining the failures of over 200 electrical switches, including thermostats.[2] App. A11-12; B2, 8, 12-15, 19. At the time of this trial, he had specifically analyzed the failures of over twenty thermostats of the type and size similar to the thermostat involved in this case. App. B2-4, 12-14, 19. His testimony was based on his examination of the remains of the thermostat, his examination of the dryer in which it was used, his application of universally recognized principles of electricity and authoritative reference material that supported his methodology of analyzing the thermostat failure and which also validated his opinions.[3] App. A11-12; B2-8, 12-19.

Mr. Rodems has also lectured on electrically caused fires, and the methodology he used in examining this thermostat paralleled his product failure analysis that has previously been accepted by other federal and state courts. App. A12.

---

[2] A thermostat is a type of switch. A switch is an electrical device designed to interrupt, regulate and control the flow of electric current. App. B3, 11-14.

[3] During the cross-examination, Petitioner's own experts both validated the application of the electrical principles cited by Mr. Rodems and conceded that a problem at the contacts within this type of thermostat is a recognized cause of a thermostat failure. App. B9-11, 21.

C. *Daubert* Hearing

Chief Judge J. Frederick Motz, the trial judge, held a comprehensive evidentiary hearing on Petitioner's Motion *in limine* to Exclude the Expert Testimony of Mr. Rodems. Reviewing that record in detail, as the Fourth Circuit Court did, reveals that the trial judge understood *Daubert* and his role in determining whether Mr. Rodems could testify. At the outset of the *Daubert* hearing, the judge recognized that he had a gatekeeping role to ensure that Mr. Rodems' opinions were reliable and relevant. App. B1-2. The *Daubert* hearing lasted several hours and takes up 184 pages in the record. The trial judge heard testimony from Mr. Rodems and he allowed cross-examination of him several times. He also heard testimony from Petitioner's experts. The trial judge reviewed the authoritative references submitted by the parties to ensure that the opinions of Mr. Rodems were well supported by those peer reviewed materials, the judge examined the physical evidence, and he also questioned the experts from the bench. App. B.

The trial judge learned that this thermostat was designed to interrupt the flow of electric current, and that the physical evidence demonstrated that it had been improperly manufactured with its internal contacts misaligned, a form of a faulty electrical connection. This condition caused the thermostat to overheat and fail, which in turn caused this fire. App. B8, 12-20. The district court reviewed the technical literature that both supported the methodology employed by Mr. Rodems and validated his opinion of the cause of this failure. App. B6-7, 14-18. After conducting the *Daubert* hearing, the

trial judge ruled that the testimony of Mr. Rodems was admissible.

Petitioner incorrectly represents that Mr. Rodems' theories were "new" or "novel." During the *Daubert* hearing, Petitioner attempted to suggest that Mr. Rodems' theories were "new" by restricting its cross-examination to his experience with thermostats made only by Petitioner, further limiting it to the specific model and style number of the thermostat that caused this fire. App. B8-9, 20-21. As Mr. Rodems explained during the *Daubert* hearing, and as the trial judge recognized, the specific model and style of Petitioner's thermostat was no different than hundreds of other switches Mr. Rodems has analyzed with respect to size, current-carrying capacity, material composition, operation and rating. There was fundamentally no difference in the methodology used in Mr. Rodems' analysis of Petitioner's thermostat as compared to the methodology he has employed in examining hundreds of other switches, including thermostats, during his career. App. B2, 4, 7-8, 17-18.

Furthermore, the principles of electricity and physics applicable to a proper analysis of why switches fail, and why faulty electrical connections cause fires, are as applicable to a "Therm-O-Disc"-manufactured thermostat as they are to other manufacturers' thermostats and switches. App. B2, 14-17, 19. The trial court reviewed the technical references provided by Mr. Rodems without any objection to them by Petitioner. The primary peer reviewed reference that Mr. Rodems submitted was an article entitled *Applying Precision Switches* that was written by Mr. John Lockwood in 1984. App. B6-7, 14-18. The Lockwood article directly validated the methodology Mr.

Rodems used in evaluating the failed thermostat and the opinions he reached. Mr. Rodems also presented several other reference articles that the court considered. App. B6-7, 14-18. While Petitioner now argues before this Court that the trial judge improperly considered the authoritative references, Petitioner neglects to inform the Court that its own expert relied on the same reference material in its rebuttal testimony during the *Daubert* hearing.[4]

REASONS FOR DENYING THE PETITION

A. The Fourth Circuit Court Of Appeals Did Not Commit Reversible Error In Ruling That The Trial Judge Properly Admitted The Expert Testimony Of Mr. Rodems

In *Daubert v. Merrill Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), this Court held that prior to the admission of expert scientific testimony, the trial judge must ensure that the testimony is relevant and reliable. The Court stated that:

> [f]aced with a proffer of expert scientific testimony, then, a trial judge must determine at the

[4] Several issues regarding the credibility and qualifications of Petitioner's expert, Mr. Mason, became apparent during the *Daubert* hearing. For example, he initially testified that he was the author of the primary reference material cited, then he conceded that he did not write that material but instead only had permission to include it in a handbook he published. It was further revealed that Mr. Mason never physically examined the failed thermostat and he admitted to having no practical experience in analyzing thermostat failures. App. B11, 21-22.

> outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. We are confident that federal judges possess the capacity to undertake this review. Many factors will bear on the inquiry, and we do not presume to set out a definitive check list or test.

Id. at 592-93.

This Court described the trial judge's role as that of "gatekeeper" to ensure that the proffered testimony is both reliable, which the Court described as "supported by appropriate validation – i.e., 'good grounds' " and relevant, which means it will assist the trier of fact to understand the evidence or to determine a fact in issue. *Id.* at 590-92. The Court instructed trial judges to focus on the principles and methodology underlying the expert's testimony, and not on the conclusions that are reached. *Id.* at 595. The Court set forth some "general observations" that it suggested may be appropriate when a trial judge is examining novel scientific evidence, but the Court instructed that several factors will bear on the trial judge's inquiry and emphasized that the trial court's review should be a "flexible" one. *Id.* at 594.

Subsequent to *Daubert*, this Court again addressed issues regarding the admissibility of expert testimony in *General Electric Co. v. Joiner*, ___ U.S. ___, 118 S. Ct. 512 (1997). In *Joiner*, the court reaffirmed that a district court's

decision to admit or preclude expert testimony is to be reviewed using an abuse of discretion standard. *Id.* at 517.

The Fourth Circuit Court of Appeals has consistently followed this Court's requirements as set forth in *Daubert*, by ensuring that the trial court serves its gatekeeper function and makes a "preliminary assessment" that the proffered expert testimony is relevant and reliable prior to being admitted. *Benedi v. McNeil-P.P.C. Inc.*, 66 F.3d 1378 (4th Cir. 1995); *United States v. Dorsey*, 45 F.3d 809 (4th Cir. 1995); *United States v. Powers*, 59 F.3d 1460 (4th Cir. 1995), *cert. denied*, 516 U.S. 1077 (1996). The Fourth Circuit's opinion below is consistent with those decisions and with the other courts of appeal that have analyzed these same issues. *Compton v. Subaru of America, Inc.*, 82 F.3d 1513 (10th Cir. 1996), *cert. denied*, 117 S. Ct. 611 (1996); *Smelser v. Norfolk Southern Ry. Co.*, 105 F.3d 299 (6th Cir. 1997), *cert. denied*, 118 S. Ct. 67 (1997); *Moore v. Ashland Chemical Co., Inc.*, 126 F.3d 679 (5th Cir. 1997).

B. The Fourth Circuit Court Of Appeals Correctly Held, Consistent With *Daubert*, That The Trial Judge Properly Considered All Appropriate And Relevant Factors In Determining The Admissibility Of Mr. Rodems' Expert Testimony

Petitioner's first argument, that the Fourth Circuit does not require consideration of *any* factors by the trial court when performing a *Daubert* analysis, reflects a misunderstanding of what the trial judge did at the *Daubert* hearing, the Fourth Circuit's opinion, and *Daubert* itself. *Daubert* clearly provides that the trial judge is vested with

discretion to consider all appropriate factors when determining admissibility of expert testimony. *Daubert*, 509 U.S. at 592. In line with *Daubert*, the Fourth Circuit's opinion stressed that the district court is required to establish that the proffered expert testimony is both reliable and helpful. Within that framework, the Fourth Circuit recognized that the trial judge is, and must be, vested with the discretion to determine what are the appropriate factors to consider to ensure the reliability and helpfulness of the testimony in each case. Contrary to Therm-O-Disc's position, neither this Court nor any court of appeals has held that the trial judge must only consider the four general factors that were specifically appropriate under the facts of *Daubert*. *Daubert* itself recognized that the trial judge is vested with the discretion to consider all appropriate factors in making the preliminary assessment of expert admissibility.

In its opinion, the Fourth Circuit properly held that the trial judge did not err in admitting Mr. Rodems' testimony, citing several factors that supported the admission of his testimony. App. A11-12. These supporting factors included that the trial judge required Mr. Rodems to proffer authoritative peer reviewed literature supporting his methodology and opinions, and that Mr. Rodems' failure analysis methodology was previously recognized as valid and appropriate in federal court. App. A11-12. These findings alone meet at least two of the general factors described in *Daubert*. The Fourth Circuit's opinion discussed other factors that the trial judge properly considered in determining that Mr. Rodems' testimony was reliable and relevant, including Mr. Rodems' twenty-five years of experience in analyzing

similar switch failures and his examination of all of the physical evidence from the fire scene, most particularly the subject thermostat. App. A11-12.

While Petitioner states that the Fourth Circuit's opinion directly conflicts with the opinions of other circuits, it cites only the case of *Smelser v. Norfolk Southern Ry. Co.*, 105 F.3d 299 (6th Cir. 1997), *cert. denied*, 118 S. Ct. 67 (1997), to support that position. *Smelser*, however, is not at all in conflict with the Fourth Circuit's opinion. In *Smelser*, the Sixth Circuit held that the expert's proffered testimony was not reliable or relevant as required by *Daubert*, because that expert's testimony was fatally flawed in several respects. The Sixth Circuit found that the expert performed an incomplete analysis of the physical evidence, the expert erroneously ignored the fact that the evidence (seat belts) may have been damaged two months earlier in an accident, the expert ignored information and specifications on how the seat belts were made, mounted and used, and much of the expert's testimony admittedly went beyond his area of expertise. *Id.* at 303-05. Contrary to Petitioner's argument, the *Smelser* court did not limit its analysis of the admissibility of expert testimony to only the four general factors listed in *Daubert*, nor did it hold that a trial judge must consider only those four general factors. The various factors that the *Smelser* court relied on in ruling that the expert's testimony was not reliable and helpful included consideration of a host of relevant and appropriate factors aside from the four "general considerations" listed in *Daubert*.

C. The Fourth Circuit Court Of Appeals Correctly Held, Consistent With *Daubert*, That The Trial Judge Made An Appropriate Preliminary Assessment To Ensure That The Proffered Expert Testimony Was Reliable And Helpful

The Petitioner further argues that the Fourth Circuit Court of Appeals erred in its analysis of whether Respondent satisfied its "burden of proof" on the issue of expert admissibility. The Fourth Circuit responded to this same argument in its opinion by explaining that the burden on the proffering party is not the same "burden of proof" that a party has on a substantive issue, reaffirming that a party does not have to "demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of the evidence that their opinions are reliable." App. A5-7; (quoting *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3d Cir. 1994)). The Fourth Circuit further clarified the burden on a proffering party by citing this Court's opinion in *Bourjaily v. United States*, 483 U.S. 171 (1987), stating that the preponderance of the evidence is the appropriate standard for determining evidentiary issues. App. A5-6, n. 9. As reflected in several post-*Daubert* appeals, the Fourth Circuit is well versed in the burden a party must meet on an evidentiary issue, and it did not commit reversible error in determining that the trial judge properly admitted the expert's testimony in this case. *See, e.g., Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378 (4th Cir. 1995); *United States v. Dorsey*, 45 F.3d 809 (4th Cir. 1995).

Petitioner also argues that the trial court improperly shifted the "burden of proof" to Petitioner instead of

requiring the Respondents to satisfy this burden. The Fourth Circuit correctly analyzed this issue which stemmed from the trial court initially stating, prior to the *Daubert* hearing, that since Petitioner filed the motion *in limine* to preclude expert testimony, it had the burden of proof. As the Fourth Circuit noted, the trial judge immediately corrected his position and Respondents then proceeded to establish the reliability and relevancy of their expert's testimony to the court's satisfaction. App. A7-8.

In fact, a review of the entire record establishes that at the close of the morning session of the *Daubert* hearing, the burden of persuasion on this issue was squarely placed on Respondents, for the trial judge summarized his thinking and stated "on that record, frankly, I just think there is a missing gap there in Mr. Rodems' reasoning, *which I am now invit[ing] the plaintiffs [respondents] to fill.*" App. B11-12. (emphasis added). The hearing continued for eighty more pages until the court determined that Respondents had met their burden and satisfied the court that the proffered expert testimony was relevant and reliable. App. A12. While the trial court's bench ruling may not have been articulated in a manner satisfactory to Petitioner, the record, when fairly read in its entirety, unambiguously establishes that the trial judge squarely performed his gatekeeper function by placing the burden on Respondents to establish that Mr. Rodems' opinions were relevant and reliable.[5] App. A12.

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[5] The entire transcript of the *Daubert* hearing was submitted to the Fourth Circuit Court of Appeals for its review.

D. The Fourth Circuit Correctly Determined That The Trial Judge Properly Applied The *Daubert* Framework Of Ensuring That The Expert Testimony Was Relevant And Reliable, And Correctly Held That The Trial Judge Did Not Abuse His Discretion In Admitting The Testimony Within That Framework

Petitioner's next argument is that the Fourth Circuit analyzed all of the issues before it by applying an incorrect "abuse of discretion" standard. Petitioner asserts that the review of whether the trial court followed *Daubert* is *de novo* and the decision to admit or exclude testimony reviewed for abuse of discretion. While the Fourth Circuit does not use the term *"de novo"* in the opinion, a review of the decision unambiguously documents that the proper scope of review was performed.

The Fourth Circuit initially discussed the proper analytical framework that applies when a trial judge is confronted with a *Daubert* issue, stating that the trial judge must determine at the outset whether the proffered testimony is to "scientific knowledge" (reliable) and will assist the trier of fact to understand and determine a fact in issue (relevant). App. A5. The Fourth Circuit determined that the trial judge properly performed the first step of this analysis.

The Fourth Circuit *then* determined that the trial judge, in applying this analytical framework, did not abuse his discretion in admitting the testimony of Mr. Rodems. The clear language of the court's opinion establishes that it properly performed this analysis, as the court held:

> [b]eyond establishing the two criteria of reliability and helpfulness, the [Supreme] Court has left the means by which these criteria are evaluated to the sound discretion of the district judge . . . Thus, we reject [Petitioner's] contention that, beyond reliability and helpfulness, there are further considerations the district court *must* make in order to comply with the demands of *Daubert*. *Further*, in the present case, we are satisfied that the district court did not abuse its discretion in admitting Rodems' testimony.

App. A10-11 (emphasis added).

The Fourth Circuit first determined that the framework of *Daubert* was complied with, although the opinion did not articulate that such a review was *de novo*. After doing so, the court then determined that within that properly applied framework, the trial judge did not abuse his discretion in admitting the expert testimony.[6] Accordingly, this argument by Petitioner is belied by an accurate reading of the Fourth Circuit's opinion, and this argument offers no support for its Petition.

---

[6] The Fourth Circuit several times noted that Petitioner "misread" *Daubert*. "But here again, we find that [Petitioner] has misread *Daubert* and decline to disturb the district court's decision on this ground." App. A9.

E. The Fourth Circuit Court Of Appeals Did Not Commit Reversible Error By Failing To Address In Its Written Opinion Petitioner's Argument That The Trial Court Improperly Considered Authoritative References Proffered By Mr. Rodems

Petitioner's final argument is that the Fourth Circuit committed reversible error because the court's opinion did not address the trial court's use of authoritative references which were provided by Mr. Rodems as additional validation for his opinions. Petitioner conveniently omits several facts that have a direct bearing on this argument. First, Petitioner fails to acknowledge that it never objected to the introduction and discussion of any of the authoritative references presented during the *Daubert* hearing or during trial. As such, this argument was waived. Fed. R. Evid. 103(a)(1); *see, e.g., Hoult v. Hoult*, 57 F.3d 1, 4 (1st Cir. 1995); *Permian Petroleum Co. v. Petroleos Mexicanos*, 934 F.2d 635, 647-649 (5th Cir. 1991).

Moreover, the primary authoritative reference cited by Mr. Rodems was the same technical literature relied upon by Petitioner, and both parties cited the material as a reliable authority. Fed. R. Evid. 803(18). It is, at best, inconsistent for Petitioner to rely on an authoritative reference to bolster its expert's rebuttal testimony, then to argue that the trial court impermissibly used that same reference material when it was presented and relied upon by Respondents' expert. Further, it is presumed for purposes of the *Daubert* analysis that the trial court has determined that the reference material cited is relevant and trustworthy. *Hoult*, 57 F.3d at 5; *United States v. Locascio*, 6 F.3d 924, 938-39 (2d Cir. 1993).

CONCLUSION

The Petitioner's Writ of Certiorari should be denied. The Petitioner has not raised any issues in its Petition that were not thoroughly analyzed and rejected by the Fourth Circuit Court of Appeals as reflected in its *per curiam* opinion. The Fourth Circuit held that the trial judge correctly applied the analytical framework of *Daubert*, and that the trial court did not abuse its discretion by admitting the testimony of Mr. Rodems. While the Petitioner states that the Fourth Circuit opinion conflicts with the opinions of other Circuits, it is unable to cite to a true conflict in any decision. The experienced trial judge properly served his gatekeeper function by preliminarily assessing the proffered expert testimony and determining that it was relevant and reliable, and the trial court did not abuse its discretion by admitting that testimony.

Respectfully submitted,

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July 21, 1998

APPENDIX A

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

THE MARYLAND CASUALTY COMPANY, as Subrogee of Eileen K. Gitelson; EILEEN K. GITELSON; SELMA INVESTMENT CORPORATION,	)	
Plaintiffs-Appellees,	)	
v.	)	No. 96-1192.
THERM-O-DISC, INCORPORATED,	)	
Defendant-Appellant,	)	
and	)	
WHIRLPOOL CORPORATION; EMERSON ELECTRIC COMPANY,	)	
Defendants.	)	

Appeal from the United States District Court
for the District of Maryland, at Baltimore.
J. Frederick Motz, Chief District Judge.
(CA-93-1132-JFM)

Argued May 8, 1997

Decided Feb. 27, 1998.

Before WILKINSON, Chief Judge, and RUSSELL*) and MICHAEL, Circuit Judges.

Affirmed by published per curiam opinion.

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* Judge Russell participated in the decision of this case, but died prior to the time the opinion was issued. The opinion is filed by a quorum of the panel pursuant to 28 U.S.C. § 46(d).

COUNSEL

ARGUED: John M. Kobayashi, KOBAYASHI & ASSOCIATES, P.C., Denver, Colorado, for Appellant. Mark E. Opalisky, COZEN & O'CONNOR, Philadelphia, Pennsylvania, for Appellees.

OPINION

PER CURIAM:[1]

This appeal requires us to consider the sufficiency of an evidentiary determination made by the district court. Specifically, we are called upon to decide whether the district court properly carried out its function as evidentiary "gatekeeper" pursuant to the Supreme Court's mandate in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*.[2] Because we find that the district court made its decision to admit certain expert testimony in accordance with the demands of *Daubert* and its progeny, we affirm its ruling.

Facts and Procedural Background

The underlying facts of this case are straightforward. On the evening of December 30, 1991, fire broke out in

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[1] This opinion was drafted by Judge Donald S. Russell. Judge Russell died while the case was under submission. The remaining panel members continue to concur in the opinion prepared by Judge Russell.

[2] 509 U.S. 579 (1993).

Eileen Gitelson's home in Potomac, Maryland. Mrs. Gitelson's insurance carrier, Maryland Casualty Company ("Maryland Casualty"), paid Mrs. Gitelson for her loss, and was subrogated to any claims she had regarding the fire. Maryland Casualty then sued Appellant Therm-O-Disc, Inc. ("Therm-O-Disc") to recover for the damage, alleging that a defective thermostat, manufactured by Therm-O-Disc and contained in Mrs. Gitelson's Whirlpool drier, caused the fire.

At trial, Maryland Casualty sought to introduce the testimony of James Rodems ("Rodems"), an electrical engineer specializing in thermostats and other electrical switches. Rodems was expected to testify that, in his opinion, the fire that began in Mrs. Gitelson's drier was indeed caused by a malfunction in the Therm-O-Disc thermostat. Therm-O-Disc objected to this profferred testimony, and moved *in limine* to exclude it. As a result of this objection, the district court held a "*Daubert*-type hearing"[3] to determine whether Rodems's testimony was admissible.

This *Daubert* hearing lasted several hours, and resulted in the district court's admission of Rodems's testimony. At the close of all evidence in the case, Therm-O-Disc made a motion for judgement as a matter of law pursuant to Rule 50(a) of the Federal Rules of Civil Procedure, arguing that: (A) Rodems's testimony was based on conjecture and speculation and was therefore not properly admitted, and (B) Maryland Casualty had failed to show a causal link between the allegedly defective

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[3] J.A. at 2.

thermostat and the fire. The district court denied this motion.

The jury returned a verdict in favor of Maryland Casualty, and assessed damages in the amount of $635,893 against Therm-O-Disc. Therm-O-Disc renewed its motion for judgement as a matter of law, which the district court also denied. This appeal followed.

Discussion

I.

Therm-O-Disc's primary argument in this appeal is that the district court failed to apply the test for the admission of expert scientific testimony demanded by *Daubert*. Within this broad allegation, Therm-O-Disc makes several specific arguments. We consider each in turn, and review the district court's decision to admit the testimony for abuse of discretion.[4]

A.

Therm-O-Disc first argues that the district court erred in placing on Therm-O-Disc the "burden of proof"[5] regarding the relevance and reliability of Rodems's testimony. Such a shift constitutes error, Therm-O-Disc contends, because "*Daubert* requires the party proffering the expert testimony to meet its Rule 104(a) [of the Federal

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[4] *General Elec. Co. v. Joiner*, 118 S.Ct. 512, 517 (1997).

[5] Appellant's Br. at 18.

Rules of Evidence] burden by a preponderance of evidence."[6] *Daubert*, however, makes no mention of a burden of "proof" regarding the decision to admit expert scientific testimony. We assume Therm-O-Disc misuses this term to denote Maryland Casualty's burden of *production* – that is, the burden of coming forward with evidence from which the trial court could determine, as *Daubert* demands, that (1) the expert will testify to "scientific knowledge," and (2) the expert's testimony "will assist the trier of fact to understand or determine a fact in issue."[7]

Nevertheless, in treating this as a "burden of proof," Therm-O-Disc misreads *Daubert*. All *Daubert* demands is that the trial judge make a "preliminary assessment" of whether the proffered testimony is both reliable (i.e. based on "scientific knowledge") and helpful (i.e. of assistance to the trier of fact in understanding or determining a fact in issue).[8] As in all questions of admissibility, the proffering party must come forward with evidence from which the court can determine that the proffered testimony is properly admissible. However, there is no requirement in *Daubert*, or any other controlling authority, that the proffering party must "prove" anything to the court before the testimony in question can be admitted.[9]

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[6] *Id.* at 20.

[7] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592 (1993).

[8] *Id.*

[9] *Daubert* cites Rule 104(a) of the Federal Rules of Evidence ("Rule 104(a)"), which states, in part, that "[p]reliminary

In replacing the stricter "general acceptance" test of *Frye v. United States*[10] with its requirement that the proferred testimony merely be reliable and helpful, the *Daubert* court expressly stated that it did so in keeping with the " 'liberal thrust' "[11] of the Federal Rules of Evidence, and emphasized that the inquiry demanded by those rules is "a flexible one," one which focuses "solely on principles and methodology, not on the conclusions that they generate."[12] Thus, in addition to prescribing

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questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b)." Fed. R. Evid. 104(a) (West 1997). "Subdivision (b)" states that "[w]hen the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence *sufficient to support* a finding of the fulfillment of the condition." Fed. R. Evid. 104(b) (West 1997) (emphasis added).

Daubert references *Bourjaily v. United States*, 483 U.S. 171 (1987), for the proposition that "[t]hese matters should be established by a preponderance of proof." *Daubert*, 509 U.S. at 592 n. 10. We do not, however, interpret "a preponderance of proof" to refer to a *burden* of proof, particularly as the Court in *Bourjaily* made the distinction between these two concepts, declaring that "the evidentiary standard is unrelated to the burden of proof on the substantive issues," and that "[t]he preponderance standard ensures that before admitting evidence, the court will have found it more likely than not that the technical issues and policy concerns addressed by the Federal Rules of Evidence *have been afforded due consideration.*" *Bourjaily*, 483 U.S. at 175 (emphasis added).

[10] 293 F. 1013, 1014 (1923).

[11] *Daubert*, 509 U.S. at 588 (citing *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 169 (1988)).

[12] *Id.* at 594-95.

fluid and general standards for the admission of scientific testimony, *Daubert* also described the trial court's role as that of a "gatekeeper" who should exercise broad discretion in admitting scientific testimony that could later be tested by "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof. . . . "[13] As the Third Circuit has stated, plaintiffs do not "have to prove their case twice – they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are *correct*, they only have to demonstrate by a preponderance of evidence that their opinions are reliable."[14]

Neither party disputes that, at the beginning of the *Daubert* hearing, the district court told Jim Rothschild, counsel for Therm-O-Disc, "[y]ou have the burden of proof" with regard to Rodems's testimony.[15] However, counsel immediately corrected the district court on this point,[16] and from then forward it appears that the district court understood both the demands of *Daubert* and its own role as "gatekeeper,"[17] and conducted the hearing accordingly. Immediately after the objection, the district court withdrew its call for Mr. Rothschild to come forward and show that Rodems's testimony was not admissible, and called Rodems himself to the stand to explain the basis for that testimony. This Rodems did under both

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[13] *Id.* at 596.

[14] *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3d Cir. 1994) (emphasis in original).

[15] J.A. at 4.

[16] *Id.*

[17] *See, e.g., id.* at 100; 102.

direct and cross-examination. After several hours of testimony, the district court determined that, although it had some reservations about the proffered basis for Rodems's opinion, "the defendant has failed to establish . . . [that] Mr. Rodems relied upon a scientific principle that was not valid."[18]

Therefore, we are satisfied that an examination of the record shows that no improper burden-shifting took place. Clearly, the court called upon Maryland Casualty to meet its burden of production by coming forward with evidence to support its contention that Rodems's testimony would be both reliable and helpful. When this was presented, Therm-O-Disc was given the opportunity to rebut, but was unsuccessful in persuading the court that Rodems's testimony was not as reliable or helpful as Maryland Casualty claimed.

From a review of the record, we conclude that the general process contemplated by *Daubert* took place in the hearing, and that Maryland Casualty squarely bore the burden of production. Therefore, we decline to reverse the district court's decision on this ground.

B.

Therm-O-Disc also claims that the district court failed, in contravention of *Daubert*, to take into consideration certain factors in making its decision to admit Rodems's testimony. Specifically, Therm-O-Disc argues that there is no evidence in the record that the district

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[18] *Id.* at 184.

court considered any of the "four non-exclusive 'general observations' that *are to be* evaluated by the trial judge"[19] pursuant to a *Daubert* inquiry.[20] But here again, we find that Therm-O-Disc has misread *Daubert*, and decline to disturb the district court's decision on this ground.

In *Daubert*, the Court established two factors that "the trial judge must determine"[21] before scientific expert testimony can be admitted. Those factors are, as stated above, (1) whether the testimony is based on "scientific knowledge" (i.e. knowledge grounded "in the methods and procedures of science"),[22] and (2) whether the testimony will be helpful to the trier of fact. The *Daubert* court described this mandated inquiry as "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue."[23]

However, beyond this inquiry, the *Daubert* court expressly declined to require consideration of any other specific factors, stating that "[m]any factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test."[24] The *Daubert* court did make what it

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[19] Appellant's Br. at 24 (emphasis added).

[20] *See Daubert*, 509 U.S. at 593-95.

[21] *Id.* at 592.

[22] *Id.* at 590. As stated above, "scientific" is often considered synonymous with "reliable." *See, e.g.*, Kenneth R. Foster & Peter W. Huber, *Judging Science: Scientific Knowledge and the Federal Courts* 15 (The MIT Press 1997).

[23] *Daubert*, 509 U.S. at 592-93.

[24] *Id.* at 593.

termed "general observations"[25] regarding what a judge should keep in mind in determining the admissibility of expert scientific testimony, but it is clear that these "observations" do not constitute the mandatory criteria described by Therm-O-Disc.[26]

Daubert clearly contemplates the vesting of significant discretion in the district court with regard to the decision to admit expert scientific testimony. Beyond establishing the two criteria of reliability and helpfulness, the Court has left the means by which these criteria are evaluated to the sound discretion of the district judge. This is apparent not only from *Daubert* itself,[27] but from subsequent Supreme Court precedent, holding that abuse of discretion is the proper standard by which evaluations of proferred evidence should be reviewed.[28] In addition, this circuit has taken the position that the *Daubert* court "was not formulating a rigid test or checklist," and was "relying instead on the ability of federal judges to properly determine admissibility."[29]

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[25] *Id.*

[26] *See* Appellant's Br. at 24; *see also Daubert*, 509 U.S. at 598 (Rehnquist, C.J., concurring in part and dissenting in part).

[27] *See Daubert*, 509 U.S. at 593 ("We are confident that federal judges possess the capacity to undertake this review.").

[28] *Joiner*, 118 S.Ct. at 517.

[29] *Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1384 (4th Cir. 1995) (citations omitted). *See also United States v. Bynum*, 3 F.3d 769, 773 (4th Cir.1993) ("The [*Daubert*] Court emphasized that it was prescribing a 'flexible' rule, one committed, as are most questions of admissibility of evidence, to the discretion of the district courts."). Therm-O-Disc relies on *United States v. Powers*, 59 F.3d 1460 (4th Cir. 1995), for the proposition that, in this

Thus, we reject Therm-O-Disc's contention that, beyond reliability and helpfulness, there are further considerations a district court *must* make in order to comply with the demands of *Daubert*. Further, in the present case, we are satisfied that the district court did not abuse its discretion in admitting Rodems's testimony.

As Maryland Casualty notes in its brief, Rodems is an electrical engineer with over twenty-five years experience in analyzing switch failures. Through his testimony, Rodems established that his opinion was based on his examination of the conditions inside the disputed switch and the application of principles of electrical engineering to those conditions.[30] Rodems was able to cite numerous

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circuit's reading of *Daubert*, there are four factors "the Supreme Court directed trial courts to consider when evaluating the scientific validity of proposed evidence:

> (1) Whether the theory or technique used by the expert can be, and has been, tested;
>
> (2) Whether the theory or technique has been subjected to peer review and publication;
>
> (3) The known or potential rate of error of the method used; and
>
> (4) The degree of the method's or conclusion's acceptance within the relevant scientific community."

Powers, 59 F.3d at 1471 (citing *United States v. Dorsey*, 45 F.3d 809, 813 (4th Cir. 1995)).

While we agree that this language in *Powers* would appear to make consideration of the four factors mandatory, we recognize that *Dorsey*, which *Powers* quotes for these factors, expressly states that "trial courts *may* consider several factors," and lists them accordingly. *Dorsey*, 45 F.3d at 813 (emphasis added).

[30] J.A. at 10; 16; 23-24; 140.

works of technical literature that he alleged supported his mode of analysis,[31] and testified that his opinion regarding electrical failures has been admitted by at least one other district court.[32]

Based on this evidence, we hold that the trial court did not abuse its discretion in admitting Rodems's testimony. Maryland Casualty came forward with ample evidence from which the district court could have made its "preliminary assessment" of reliability and helpfulness, and the district court clearly did not find that Therm-O-Disc's rebuttal was sufficient to overcome that evidence. As the matter was within the district court's sound discretion, we find that it committed no error in deciding to admit the testimony.

II.

We next consider Therm-O-Disc's contention that Maryland Casualty did not prove a causal link between the thermostat and the fire in the Gitelson home, and thus that Therm-O-Disc was entitled to judgment as a matter of law. Under Maryland law, which applies in this diversity case, to recover in strict liability for a manufacturing defect, a plaintiff must establish, *inter alia*, a causal relationship between the claimed defect and the injury.[33] There is no question that the offered proof must rise

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[31] *Id.* at 16-18.

[32] *See id.* at 294-306.

[33] *Jensen v. American Motors Corp.*, 437 A.2d 242, 247 (Md. App. 1981).

above the level of speculation or conjecture.[34] Any facts that establish proof greater than speculation or conjecture, however, create a question for the jury.[35] Furthermore, proximate cause may be established by circumstantial evidence.[36]

In this case, the jury heard Rodems's theory that the thermostat was defective and caused the fire. Maryland Casualty introduced other evidence that ruled out any other cause of the fire. Under these circumstances, it was left to the jury to determine the question of causation, which it resolved in favor of Maryland Casualty. Examining the evidence in the light most favorable to Maryland Casualty, we hold that the jury properly reached its verdict.

III.

Finally, Therm-O-Disc disputes the district court's admission of Mrs. Gitelson's testimony concerning her damages. It argues that expert testimony was required to establish the value of Mrs. Gitelson's household goods.

Mrs. Gitelson testified as to the value of her household possessions, including the following: a $3,500 blouse, two $2,000 dresses, several dresses worth $1,000 or more, sixty sweaters and pairs of shoes valued at over $200 each, two sofas worth a total of $25,000, a shower curtain valued at almost $1,900, and other similarly

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[34] *Id.* at 245.

[35] *C & K Lord, Inc. v. Carter,* 536 A.2d 699, 709 (Md. App. 1988).

[36] *McSlarrow v. Walker,* 467 A.2d 196, 200 (Md. App. 1983).

expensive items. In *Lakewood Engineering & Manufacturing Company v. Quinn*,[37] the Maryland Court of Appeals took note "of the long-standing rule that an owner of property can testify as to its value."[38] Under Maryland law, a homeowner can testify as to the fair market value of common consumer goods, which will usually be close or equal to their replacement cost. Expert testimony, however, is required to establish the value of unusual items such as rare books or art work.[39]

Therm-O-Disc argues that the items Mrs. Gitelson lost in the fire were so unusual as to require expert testimony. Therm-O-Disc's position confuses the nature of the goods with the quality of the goods. While the goods in question were clearly expensive, they were indisputably common, household goods. Thus, we hold that, under *Lakewood*, no expert was required, and that Mrs. Gitelson's testimony was sufficient to establish her damages.

IV.

For the foregoing reasons, the judgment of the district court is affirmed.

AFFIRMED.

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[37] 604 A.2d 535 (Md. App. 1992).

[38] *Lakewood Eng'g & Mfg. Co. v. Quinn*, 604 A.2d 535, 542 (Md. App. 1992).

[39] *Id.* at 542-43.

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

Civil Case No. JFM-93-1132

MARYLAND CASUALTY COMPANY,
As Subrogee of
EILEEN K. GITELSON, et al.,

Plaintiffs

vs.

THERM-O-DISC, INCORPORATED,
Defendant

Baltimore, Maryland
November 27, 1995

The above-entitled case came on for trial before the Honorable J. Frederick Motz, Chief Judge.

* * *

[2] PROCEEDINGS

[3] THE COURT: Let me say also that recognizing I have a gatekeeping role, I am going to do the very best that I can to make a determination based upon what I hear today. On the other hand, I think it is against the purposes and spirit of the Civil Justice Reform Act of 1990 that is intended to reduce the cost and delay of litigation and in addition, frankly, any kind of principal of sound management of judicial time and public

resources to simply have two trials or a mini-trial in the guise of a Daubert hearing.

I, frankly, believe that one cannot finally determine admissibility questions until a factual context has been developed. So, whatever ruling I make today, if I decide to let the testimony go forward, that will be subject to me reserving the ruling to strike the testimony after it has been presented to the jury. I simply don't think it makes any sense [4] whatsoever to have two, two trials, and it is impractical; although to some extent, to the extent that the issues become so factually specific, that raises the question of whether there is a Daubert issue at all. I understand that. If it really gets into the ins and outs of specific testimony, then that may prove that it is for the jury and not for the judge.

* * *

[6] DIRECT EXAMINATION

BY MR. OPALISKY:

[JAMES D. RODEMS]

[7] Q Mr. Rodems, have you examined thermostats in the past during your career?

A Yes, sir, many.

Q Approximately how many times?

A At least 20 or 30 times.

Q The principles regarding thermostats and the heat generated, have you focused on those principles in other examinations?

A I have.

Q You talked about those principles. One you said is I-squared R heating. Could you explain specifically what that is?

A When one has two contacts that are together – [8] first of all, when one makes any kind of an electrical connection, whether it is in an outlet box with a screw or whether it is a contact in a switch, we always have what is known as connection resistance or contact resistance. So the current flowing through that squared times that resistance value generates heat at the connection point. That is I-squared R heating.

The other form of I-squared R heating is when the insulation itself that surrounds the switch, holds the switch because pyrolyzed or carbonized creates a leakage path across the switch and to the ground adjacent to the switch to the metal, and that insulation resistance, as it degrades, will also generate heat.

Q Sir, let me show you a thermostat provided by defendant in discovery, which is 60T, Style 200042, [9] and ask if you recognize that thermostat, or that type of thermostat?

A Yes, sir, I do.

Q Does that thermostat resemble the type of thermostat that you examined from the Gitelson dryer?

A It does, yes, sir.

Q Using that thermostat, can you show the Court, with the various heat sources that were applied internal, what happened to the thermostat and how it separated?

[10] A I have seen it in other fires where the dryer is in the path of a major fire, and it is totally destroyed. Then we find bits and pieces of this, where it has fallen out because all the bakelite has basically, most of it has pyrolyzed, shrunk and turned to dust.

In this case, we find that this bakelite shrank sufficiently for this thing to fall out, and it wasn't caused by exterior heat. It was caused by interior heat.

[11] Q What happens when there is internal heat that causes the bakelite to shrink?

A When you get something above four or 500 degrees, and certainly temperatures up to 800 degrees, the bakelite is going to change from an insulator to a conductor. All the volatiles will be driven out. It is like a pierce [sic] or [sic] wood that burns. It shrinks as it burns.

The same thing happens to this phenolic. As it heats and boils off the vapors from the bakelite itself, it shrinks, and it is evident in the unit itself that the safety overtemp device, one of these that came out of the Gitelson dryer, you can see that it shrunk. I mean it is not just a little bit, enough to fall out.

Q When it falls out, then what happened as far as leading to the fire originally?

A The heating effect over a long period of time does the shrinking. It falls out and we've got hot terminals here. [12] It means they have 120 volts on them. If one were to ground this, one of these terminals, as it occurred in the Gitelson dryer, then you get a fault, you get an arcing fault, as is evidenced by the back cover. It is that

arcing products of molten steel, and we had molten steel, 2500 degrees to melt steel.

Q Sir, as far as the three sources of internal heating that led to the shrinkage, the one you referred to was resistive heating, I-square R or I-squared R heating, that type of heating is in existence with every thermostat made?

A That is correct.

[15] Q Did you give any consideration that the shrinkage may have been caused from an external heat source?

A Yes, sir, and I ruled that out.

Q How did you do that, sir?

A The only external heat source that we can see have an effect was the normal heat supplied by the electric heater, which this was supposed to sense. We saw no sign of extraordinary heat in the electric [16] heating chamber, plus the exterior of this unit shows far less damage, heat damage than the interior.

So it is natural examination of a fire scene where you look for the most heat damage, and where is it? It is inside the switch. It is not outside the switch.

Q The heat damage to me appears to be somewhat off-centered within that thermostat. Is that fair to say?

A That is correct.

Q What was there off-centered versus in the exact center of the thermostat?

A The electrical contacts are off-centered. The immediate source or point of origin of this heat appears to be right where the original contacts were.

Q Sir, are there any noted or authoritative references that you have an understanding that talks about the various sources of heat and the heat increasing?

A Yes, sir.

Q Would you explain to the Court what those sources are?

A I have some references here, Handbook of Insulating Materials that talks about the normal operation of phenolics and materials of that sense or [17] that kind.

Then we have the Materials Handbook, which talks about the contact materials and arc erosion and phenolics and the temperature, operating temperature ranges.

I have a third reference, Encyclopedia of Physics which addresses arcs and sparks and the plasma ionized gas density related thereto.

I have another reference called Applying Precision Switches by Lockwood, which also talks to plasma and arcs.

I have another reference, again Lockwood, which talks about switch destruction and insulation resistance loss, and the same Lockwood reference, which is an 1984 document, talks to insulation breakdown in these switches.

Q The principles you relied on, did you also see reference to those in Mr. Mason's handbook?

A That is correct. As a matter of fact, I saw pretty much identical, the identical information that [18] came out of Lockwood in '84 in Mr. Mason's book.

Q Did those principles, either through Lockwood or Mr. Mason's handbook, or the other authoritative references talk about the resistance of, of heating increased as contacts begin to wear out?

A That is correct. They talk about the various heat sources as I described, and they are clearly delineated in those references.

Q Sir, as far as your conclusion, I think you indicated that the heat sources were excessive enough to melt this phenolic. What was there different about this thermostat that gave us that slightly more heat than you would have in, say, other thermostats?

A Well, it is what I call a fail-safe versus a fail-unsafe, in the sense that either the thermostat quits by opening and it can't be closed anymore, so it doesn't work anymore, or it welds itself shut and it doesn't perform as a thermostat any longer, but it may or may not cause a fire.

[19] Q Mr. Rodems, you also mentioned arc heating earlier today. Could you explain what arc heating is, particularly as it was involved with this thermostat?

A When one opens a circuit, when one opens a circuit that is carrying current, an arc is drawn between the two contact points, and that arc has high enough temperatures to melt the materials that the contacts are made of, one of which is a layer of silver on some copper or brass. We know what those temperatures are that takes

melt that. It is like [20] 1700 degrees to melt silver, under those conditions.

Q Were the methodologies and techniques you used in analyzing this thermostat from the Gitelson dryer the same methodologies and techniques you've utilized in your past 25 years of doing forensic work?

A Yes. This is one form of arc-associated damage [21] that occurs in circuit breakers and power systems. I've probably looked at two or 300 cases of arc damage ranging from 120 volts to 20,000 volts. Of course, the larger voltage one gets to, the more impressive the damage is.

[23] Q Do you have an opinion in this case to a reasonable degree of certainty as to what was within the thermostat that led it to have the excessive heat versus the normal heating you would have associated with the thermostat?

A I believe it started with a misaligned contact, some form of misalignment.

* * *

CROSS EXAMINATION

BY: MR. ROTHSCHILD

[28] Q Have you, yourself, conducted any tests in which you have been able to have a thermostat, this type of thermostat, a 60T, with these electrical characteristics, in which you had it run and that it is self-destructive because of either internal heating or because of arc damage? Have you conducted any such tests?

A On this specific thermostat, no. Others, yes.

[30] Q Have you ever seen a thermostat that looks like [31] the Gitelson thermostat, anybody ever report that a thermostat that had the characteristics of the Gitelson thermostat self-destructed from internal heating or from excessive plasma arc?

A Yes, sir, and I gave you that answer in my deposition.

* * *

[41] DIRECT EXAMINATION

BY MR. ROTHSCHILD

[GORDON KEITH WELLS]

* * *

[49] CROSS-EXAMINATION

BY MR. OPALISKY

Q Mr. Wells, you and I have seen each other during depositions over the last year or so. You are using the term self-destruct.

Just so I am clear, this thermostat, you would agree with me fell apart? In fact, you testified to that?

A Yes.

Q It fell apart because the phenolic, plastic body of the thermostat shrunk, and it fell out of the metal bracket it was mounted into?

A Yes. We talked about falling apart.

[52] Q At the contacts where they meet, there is resistive heating there, also known as I-squared R heating?

A That is true. That happens, whether it is new or old. There is some generated, yes.

[54] Q Sir, in your deposition, so I am clear, you testified that when you first observed the Gitelson contact, your initial opinion was that it failed due to internal heat, correct?

[55] A I recall at the deposition I indicated that I made some notes, and those were my initial impressions, they were not final conclusions, and that my initial impression was that there was certainly thermal damage to the control. Thermal damage appeared to be centered really outside of the switch case itself.

Now the switch case that remains today shows some damage right at the edge of it, but there is a part that is missing that is broken off that was heavily damaged, and my initial impression was that that kind of damage that I saw could be perhaps caused by either heating generated at the contacts or heat generated at connections external to the control.

Q So I am clear, you initial impression was that it could have been from internal heating at the contacts, but now, in giving an opinion, you have gone away from that initial impression and have some other opinions?

A Right. The initial impression was it could have been perhaps.

* * *

[JOHN R. MASON]

[56] DIRECT EXAMINATION

BY MR. ROTHSCHILD:

Q Mr. Mason, you are the author of a publication known as the Switch Handbook?

A Yes.

Q Is that considered one of the references in the field involving how switches, including thermostats, operate?

A How switches operate, yes.

Q Is a thermostat a type of switch?

A Yes, it is.

* * *

[74] CROSS-EXAMINATION

BY MR. OPALISKY:

[75] Q As I understand it, you never analyzed thermostats that may have either been involved in causing a fire or may have been a victim of a fire?

A That is correct, yes.

* * *

COURT RULING

[97] THE COURT: The question is where is there before me anything, either by a specific test or by

anything in the literature, to support Mr. Rodems' opinion that that could have happened?

[100] THE COURT: I understand that Daubert in some ways is a, had its origin as a broadening test. On the other hand, it did articulate certain principles for me to apply in determining whether an expert opinion is going to help the fact finder.

[103] THE COURT: That is where the record now is. On the record, frankly, I just think there is a missing gap then in Mr. Rodems' reasoning, which I am now invite [sic] the plaintiff to fill.

* * *

[104] DIRECT EXAMINATION

BY MR. OPALISKY:

[JAMES D. RODEMS]

Q First of all, there was some testimony today that if your scenario is true, why isn't every dryer body falling out of the holding bracket and why aren't light switches a problem, and can you address that, please?

A Well, that does happen. In my experience of 25 years of fire, electrical fire investigations, we have had many switches; we have had many thermostats; we have had wall switches. We have had 15 amp circuit breakers in houses, 15 and 20 amps and 30 amp breakers that have failed similar to what we see the failure in this piece of equipment. So it is something that is common in my experience, in a switch being a high [105] failure rate item

because it does have to interrupt electricity and quench an arc in a very small volume.

Q Why aren't there more fires?

A Well, there actually are. It is not common knowledge to the citizenry, but the fire investigators, the electrical people see lots of it.

Q Sir, some of the principles that you relied on with this switch – now as I understand it, this switch, in its application, handled about 21 amperes of electricity, is that correct?

A If one doesn't count the leakage currents, that is true. That is its normal rate of load.

Q Is that considered, you know, such a small amount of amperage that you can't have enough heat to distort the phenolic body?

A Quite the contrary. The I-squared R heating, if we have 20 amps flowing through this switch – the I-squared R means that you square the current, multiply it by the resistance. That gives you the watts. So the square of 20 is 400.

[106] So we know that the 20, 15 to 20 to 30 amp range is quite adequate to cause overheating of any circuit just to "contact resistant."

The only thing that made a difference is that is an order of magnitude increase of current. Certainly it is an order of magnitude increase in the price of the penalty that is paid for a failure, but the principles don't have a magic cutoff of 20 amps, 10 amps.

The only safe place that we find in what is known as intrinsically safe equipment is we are down in the milliamps, where we can't get enough power to do much of anything, like a telephone circuit. Very rarely do you have a fire in a telephone circuit because you are talking about milliamps and 50 volts.

Now in 120 volts, most of our fires occur at 120 and 240 and in circuits that are only 15, 20 or 30 amp circuits; yet our circuit breakers are actually quite a lot larger than this switch in order to, again, handle the fault current that may occur, the overcurrent, due to an overload. Like in your kitchen, you plug one [107] more thing in and the circuit breaker pops. It's got to interrupt the arc.

It has got to do it in the same manner, with the same principle, the same physics, the same engineering that this switch is operating.

Q Sir, are there, or what authoritative references are there which discusses and deals with the principles that you are relying on in this case and that talks about those principles and their effect long term on [108] switches?

A I mentioned it this morning, failed to go into it deeply enough apparently. This is Applying Precision Switches by Mr. Lockwood. It is a 1984 document.

THE COURT: Your Honor, may I present you with a copy of that?

THE COURT: Certainly.

A In the introduction on page four – this is the same class of switch now, sir, that we are talking about in terms of amperes, the size of the switches. If you look on page

four, you will see they refer to a 15 amp, 240 volt heater circuit.

Q This, Mr. Lockwood's publication, Applying Precision Switches, what type of switches then is he dealing with in this application?

A If we categorize them from the standpoint of relative sizes and current, it is the same class of switch.

Q Okay. This is an authoritative reference that you relied on in your work and your work on this case, [109] correct?

A And it is duplicated in Mr. Mason's book.

Q Okay, sir. Using, for example, Mr. Lockwood, if you would cite the Court to specific references that support your opinion regarding leakage current, I-squared R heating, and the effect of the arc on the switch itself?

A There is a whole section on switch life that begins on page 30 –

MR. OPALISKY: Your Honor, that is the second page of yours. I didn't copy the in between pages.

Q Sir, would you, before you read specific references, cite the Court to where you are reading and that references application to your theory?

A I am looking on page 30, Section V, labeled Switch Life. It talks about the contact welding, among other things, as a major heading.

[110] Q Again, sir, is my understanding correct that this reference is dealing with a 15 amp thermostat?

A The class of switch is in the order of 15 amps and 240 volts, which is the same class that we are talking about with respect to this thermostat?

Q These principles cited by Mr. Lockwood in his work, they would also hold true to the thermostat at the Gitelson dryer?

A That is correct.

Q Sir, then that includes –

A There is no magic line that one draws that says these principles apply here and don't apply here, unless one gets down into the milliamps and the low voltage circuits, where there isn't enough power available to cause a fire.

Remember now, most fires occur at 120 volts because we have more people using 120 volts.

Q In fact, sir, if I may just interrupt you for a moment there, in order to have the terminal weld to the [111] back of the dryer's panel, as it did in this case, which type of amperage are we dealing with for that situation?

A It could be anywhere from 10 amps to 50 amps or 60 amps.

[114] Q What effect, specifically for purposes of this case, does the heating, does that leakage current heating on the body of the switch have to do with the failure?

A It is just another heat source that is heating up the body of the switch. It is another kind of I-squared R heating. It is the leakage current squared times the insulation resistance, which is now degraded, and it is adding

more heat to the small interior environment of this switch.

Q Is there any reference, either Mr. Lockwood or elsewhere, that talks about the combination of heating sources and that combination leading to deterioration?

A If you turn to page 32, top of the page, on the left, although failure modes have been described [115] individually, two or more may combine.

So in sum, in looking at this 1984 credible authoritative reference, which was copied by Mr. Mason in his book ten years later, there is the basis of the scientific background of how I interpret this switch failure.

Q Sir, as I understand it with this reference material, it does talk about I-squared R heating and the increase over the life of the switch?

A That is correct.

Q That is in a switch of the size of the Gitelson thermostat, the 200042 60T thermostat?

A Based on using current as a measure of size and physically, approximately the same size.

[117] Q What about the test the defendant talked about today, the 21 amp test and the accelerated 66 amp life cycle test? Did you find those tests to support your opinion in this case?

A At least one. Several results do, but one in one particular case we have shows a hole burned through the cover of the switch.

[118] A Excuse me a minute. There is a sample of a misaligned contact which has burned a hole from interior heat through the back cover.

Q How did that burning of a hole –

A It generated internal heat.

Q Sir, the various references to Lockwood, the leakage currents, the increased resistive heating and how those all had an effect on the phenolic body, again, that was with a thermostat of the same [119] application as the Gitelson's, the 20 amp thermostat?

A Yes.

Q Are those the same principles, as far as from a technical or analytical standpoint, the same principles that would hold true in other types of equipment, such as something involving a 500 amp circuit?

A Let me say that it exists at all currents. It gets more pronounced in its effect on failure as you get to large currents. You cannot draw a line at a hundred amps or 500 amps or 20 amps and say that nothing is going to happen of any untoward consequence when, in fact, you have to go all the way down to milliamps before one can positively make that statement.

Q Sir, can you describe some of your other experiences in testifying within either a federal or state court in the United States in which you offered opinions involving the effect of phenolic in a thermostat or in a light switch or in some other application which involves the same amperage as this application?

[120] A Let's just say that I have looked at some 500 cases and will confine them for the moment to 120 or 240 volts, where we've had component failures, switches, motors, insulation, relays, a whole raft of components at these voltages and current levels, and we see these phenomena of contact resistance, connection resistance, of ambient heat, of I-squared R heating, of leaky insulators because they have been pyrolyzed due to age or heat, or somebody has built a piece of equipment in which they don't put a high enough temperature wire inside a hotter compartment so the wire insulation pyrolyzes and ultimately causes a [121] failure.

So the fundamentals of where the heat comes from electrically are common knowledge, sir.

Q Sir, I want to be sure. The general principles, I take it, are common knowledge, as you testified to. What about those principles that play in a device such as a 20 or 21 amp component?

A They are still there. In fact, if one were to deny those fundamental principles at 20 amps, then one would be hard-pressed to explain many, many electrical fires.

Q Sir, in this case, in addition to the support from the authoritative references, you also analyzed the thermostat itself?

A Yes.

Q You may have touched upon this this morning, but just for the record now, could you just generally outline what your observations of the thermostat were?

A We saw the, I will use the word devastated, catastrophic destruction, heat damage on the inside of the switch. It wasn't due to an exterior fire.

And ask yourself, well, what caused the fire? All of the things that caused it, I just reiterated, are covered in Lockwood on a section on switch life. I didn't invent this. I used – these [122] same principles are everywhere in electrical fires.

* * *

[124] CROSS-EXAMINATION

BY MR. ROTHSCHILD:

[125] THE COURT: You obviously asked the question and he gave that answer. Now you can explain. Go ahead.

A All during that deposition, sir, you kept insisting on a 60T11. Everything that I had done had to be was it a 60T11. I had never seen a 60T11 with that kind of damage, that's correct.

* * *

[134] REDIRECT EXAMINATION

BY MR. OPALISKY:

Q Sir, there was a question from your deposition read to you today in which at the deposition you were asked about the particular failure mode within thermostats.

A Right.

Q Have you seen that failure mode in other switches in which the same principles that are applied with this thermostat are applied?

A I have already answered that question, sir. Yes.

* * *

[138] Q The buildup of heat increasing over a period of time is supported by the Lockwood reference?

A Yes.

* * *

[JOHN R. MASON]

[143] CROSS EXAMINATION

BY MR. OPALISKY:

[156] Q The principles discussed in this book and in Mr. Lockwood's article also hold true for an application in a 15 or 20 amp circuit?

A Yes.

[157] Q Would you agree with me that from that section of your book, which begins switch life is a function of a [158] number of variables, throughout the next 20 or more pages, all this information is copied actually verbatim from Mr. Lockwood's article?

A Yes.

[168] Q This switch, have you examined this switch?

A The –

Q The Gitelson thermostat?

A The one –

Q From the dryer

A No, I have not.